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STIC Search Report

EIC 1700

STIC Database Tracking Number: 178833

TO: Ardith Hertzog
Location: REM 9A20
Art Unit : 1754
February 8, 2006
Case Serial Number:
~~PCT/US04/05645~~ 10/786,671

From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538

Leslie.henderson@uspto.gov

Search Notes

~~7. The composition of claim 6, wherein the polyoxometalate has the formula $A[V_kMo_mW_nNb_oTa_pM_qX_rO_s]^{y-}$, wherein A includes at least one counterion selected from alkali metal cations, alkaline earth metal cations, ammonium cations, quaternary ammonium cations, d-block cations, f-block cations, and combinations thereof, wherein M includes at least one element selected from an f-block element and a d-block element having at least one d-electron, except for vanadium, molybdenum, tungsten, niobium, or tantalum, wherein X includes at least on element selected from a p-block element, a d-block element, and an f-block element, except for oxygen, wherein k can range from 0 to 30, wherein m can range from 0 to 160, wherein n can range from 0 to 160, wherein o can range from 0 to 30, where p can range from 0 to 10, wherein q can range from 0 to 30, wherein r can range from 0 to 30, wherein s is a number so that y is greater than zero, wherein the sum of k, m, n, o, and p is greater than or equal to four; and wherein the sum of k, m, and q is greater than zero.~~

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8. ~~The composition of claim 6, wherein~~ the polyoxometalate has the formula $[X^{g}V_b^{j+}M_c^{h+}Z_{12-b-c}^{i+}O_x]^{u-}[A]$, wherein X is at least one p-, d-, or f-block element; g is greater than or equal to 2; M is at least one f-block element or d-block element having at least one d-electron, wherein M is not vanadium; h is from 1 to 7; i is from 5 to 6; j is from 4 to 5; x is 39 or 40; Z is tungsten, molybdenum, niobium, or a combination thereof; b is from 0 to 6; c is from 0 to 6; u is from 3 to 9; and A is a counterion.

33

9. ~~The composition of claim 6,~~ wherein the polyoxometalate has the formula $[X^{g}V_b^{j+}Z_{12-b}^{i+}O_{40}]^{u-}[A]$, wherein X is at least one of phosphorus, silicon, aluminum, boron, zinc, cobalt, or iron; b is from 1 to 6, and a is from 3 to 9.

30

10. ~~The Composition of claim~~ 6, wherein the polyoxometalate has the formula $[X^{g+}M_c^{h+}Z_{12-c}^{i+}O_{40}]^{u-}[A]$, wherein X is at least one of phosphorus, silicon, aluminum, boron, zinc, cobalt, or iron; c is from 1 to 6, and a is from 3 to 9.

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Bib Data Sheet

CONFIRMATION NO. 3022

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/786,671	02/25/2004 RULE	588	1754	50508-1190

APPLICANTS

Nelya Okun, Alpharetta, GA;

Craig L. Hill, Atlanta, GA;

(PCT is based on this US case)

* CONTINUING DATA *************************
This appln claims benefit of 60/449,892 02/25/2003

* FOREIGN APPLICATIONS ********************

** SMALL ENTITY **

	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed ☐ yes ☐ no 35 USC 119 (a-d) conditions met ☐ yes ☐ no ☐ Met after Allowance Verified and Acknowledged ____ Examiner's Signature ____ Initials	GA	0	58	2

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24504
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP
100 GALLERIA PARKWAY, NW
STE 1750
ATLANTA , GA
30339-5948

TITLE
Compositions, materials incorporating the compositions, and methods of using the compositions and materials

FILING FEE RECEIVED		
792	FEES: Authority has been given in Paper No. ________ to charge/credit DEPOSIT ACCOUNT No. ________ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other ________ ☐ Credit

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                SEL RN

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                109-52-4/BI OR 110-81-6/BI OR 110-86-1/BI OR 13093-17-9
                /BI OR 13138-45-9/BI OR 134360-58-0/BI OR 13770-18-8/BI
                 OR 3251-23-8/BI OR 34946-82-2/BI OR 352-93-2/BI OR
                38465-60-0/BI OR 50-00-0/BI OR 503-74-2/BI OR 505-60-2/
                BI OR 57-12-5/BI OR 59858-44-5/BI OR 624-92-0/BI OR
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                OR 75-50-3/BI OR 7664-41-7/BI OR 7704-34-9/BI OR
                7727-37-9/BI OR 7783-06-4/BI OR 79-09-4/BI OR 795308-36
                -0/BI OR 796042-78-9/BI)
L3           13 SEA ABB=ON  PLU=ON  L2 AND 2/NC
                D SCAN
L4            4 SEA ABB=ON  PLU=ON  L3 AND BUTANAMINIUM
                D SCAN
L5            9 SEA ABB=ON  PLU=ON  L3 NOT L4
                D SCAN
L6           28 SEA ABB=ON  PLU=ON  L2 NOT L3
                D SCAN

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                D SCAN
                D SCAN TI
L8         1977 SEA ABB=ON  PLU=ON  POLYOXOMETAL? OR POLY(A)OXOMETAL?
                OR POLYOXO(A)METAL? OR POLY(2A)OXO(2A)METAL?
L9           35 SEA ABB=ON  PLU=ON  OKUN  N?/AU
L10        2316 SEA ABB=ON  PLU=ON  HILL C?/AU
L11          10 SEA ABB=ON  PLU=ON  L9 AND L10
L12           2 SEA ABB=ON  PLU=ON  L11 AND L7
L13           8 SEA ABB=ON  PLU=ON  L11 AND L8
                D SCAN
                D L13 1-8 TI AU CC

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L18           1 SEA ABB=ON  PLU=ON  L4 NOT L17
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L19        2458 SEA ABB=ON  PLU=ON  (V(L)O)/ELS AND L16
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                D QUE L14
L21        8617 SEA ABB=ON  PLU=ON  L16 AND 39-40/O
L22        1460 SEA ABB=ON  PLU=ON  L21 AND L19
L23        2318 SEA ABB=ON  PLU=ON  L16 AND 6>=V
L24       47408 SEA ABB=ON  PLU=ON  L16 NOT 1-100/V
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                OR CO OR FE)/ELS
L27        1112 SEA ABB=ON  PLU=ON  L26 AND 40/O
L28        1435 SEA ABB=ON  PLU=ON  L21 AND L23
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                D QUE
                D QUE L14
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L37        1317 SEA ABB=ON  PLU=ON  L28
                D QUE L36
L38        8151 SEA ABB=ON  PLU=ON  L35 OR L36 OR L37
L39           3 SEA ABB=ON  PLU=ON  L11 AND L38
                D SCAN
L40         662 SEA ABB=ON  PLU=ON  L38 AND L8
L41         483 SEA ABB=ON  PLU=ON  L38 AND (?NITRATE OR NITRIC(A)ACID)


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                D SCAN

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L45           3 SEA ABB=ON  PLU=ON  L44 AND L38
                D SCAN
L46      429744 SEA ABB=ON  PLU=ON  AIR POLLUTION/SC,SX
L47          87 SEA ABB=ON  PLU=ON  L38 AND L46
L48      526458 SEA ABB=ON  PLU=ON  TOX?/SC,SX
L49          20 SEA ABB=ON  PLU=ON  L48 AND L38
L50     1252802 SEA ABB=ON  PLU=ON  PHARMACOL?/SC,SX
L51         107 SEA ABB=ON  PLU=ON  L50 AND L38
L52             QUE ABB=ON  PLU=ON  CONTAMIN? OR POLLUT? OR TOX? OR
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                DECONTAM?
L55         332 SEA ABB=ON  PLU=ON  L38 AND L54
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L62           9 SEA ABB=ON  PLU=ON  L35 AND L46
L63          10 SEA ABB=ON  PLU=ON  L35 AND L48
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L65          24 SEA ABB=ON  PLU=ON  L35 AND L52
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L69          29 SEA ABB=ON  PLU=ON  L61 OR L62 OR L63 OR L67
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L71          10 SEA ABB=ON  PLU=ON  L37 AND L48
L72          22 SEA ABB=ON  PLU=ON  L37 AND L50
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L76           25 SEA ABB=ON  PLU=ON  L70 OR L71 OR L75
L77           29 SEA ABB=ON  PLU=ON  L76 OR L69
L78           80 SEA ABB=ON  PLU=ON  L36 AND L46
L79           13 SEA ABB=ON  PLU=ON  L36 AND L48
L80          105 SEA ABB=ON  PLU=ON  L36 AND L50
L81          135 SEA ABB=ON  PLU=ON  L36 AND L52
L82          309 SEA ABB=ON  PLU=ON  L36 AND L54
L83           66 SEA ABB=ON  PLU=ON  L36 AND L57
L84           39 SEA ABB=ON  PLU=ON  L79 OR L77
L85              QUE ABB=ON  PLU=ON  COMPOSIT? OR COMPN# OR COMPSN#
L86          831 SEA ABB=ON  PLU=ON  L38 AND L85
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L88           68 SEA ABB=ON  PLU=ON  L86 AND (L48 OR L50 OR L52 OR L54
                 OR L57)
L89            3 SEA ABB=ON  PLU=ON  L88 AND L48
L90           10 SEA ABB=ON  PLU=ON  L88 AND L50
L91           10 SEA ABB=ON  PLU=ON  L88 AND L52
L92           42 SEA ABB=ON  PLU=ON  L88 AND L54
L93           11 SEA ABB=ON  PLU=ON  L88 AND L57
L94           28 SEA ABB=ON  PLU=ON  (L89 OR L90 OR L91) OR L93
L95           33 SEA ABB=ON  PLU=ON  L94 OR L87
L96           66 SEA ABB=ON  PLU=ON  L95 OR L84
                 D SCAN TI
L97           33 SEA ABB=ON  PLU=ON  L96 AND L85
L98              QUE ABB=ON  PLU=ON  MIX? OR MIXT# OR MIXTURE? OR
                 BLEND? OR ADMIX? OR COMMIX?
L99              QUE ABB=ON  PLU=ON  IMMIX? OR INTERMIX? OR DOPE# OR
                 DOPING# OR DOPANT# OR IMPREGNAT? OR COMPOSIT? OR
                 COMPN#
L100             QUE ABB=ON  PLU=ON  COMPSN# OR FORMULAT? OR COMBINAT?
                 OR INTERSPER? OR AMALGAM?
L101          42 SEA ABB=ON  PLU=ON  L96 AND ((L98 OR L99 OR L100))
L102          42 SEA ABB=ON  PLU=ON  L97 OR L101
L103             QUE ABB=ON  PLU=ON  (MIXT# OR MIXTURE? OR BLEND? OR
                 ADMIX? OR COMMIX? OR IMMIX? OR INTERMIX? OR COMPOSIT?
                 OR COMPN# OR COMPSN# OR FORMULAT? OR INTERSPER?)/TI
L104          13 SEA ABB=ON  PLU=ON  L96 AND L103
L105          42 SEA ABB=ON  PLU=ON  L102 OR L104
L106           2 SEA ABB=ON  PLU=ON  L11 AND L105
                 D SCAN
L107           8 SEA ABB=ON  PLU=ON  L106 OR L12 OR L13
L108          48 SEA ABB=ON  PLU=ON  L107 OR L105
L109         110 SEA ABB=ON  PLU=ON  L40 AND (L46 OR L48 OR L50 OR L52
                 OR L54 OR L57)
L110          18 SEA ABB=ON  PLU=ON  L109 AND L85
L111          32 SEA ABB=ON  PLU=ON  L109 AND ((L98 OR L99 OR L100))
L112           6 SEA ABB=ON  PLU=ON  L109 AND L103
L113          54 SEA ABB=ON  PLU=ON  L110 OR L112 OR L108
L114          64 SEA ABB=ON  PLU=ON  L111 OR L113
L115          10 SEA ABB=ON  PLU=ON  L114 NOT L113
                 D SCAN TI
L116           8 S L11 AND L113
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=> => d l114 1-64 ibib abs hitstr hitind

L114 ANSWER 1 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1272658 HCAPLUS
DOCUMENT NUMBER: 144:31700
TITLE: Anti penicillin-resistant streptococcus pneumonia (prsp) heteropolyacid compounds and their preparation method
INVENTOR(S): Liu, Shuxia; Bai, Yunpeng; Zhai, Hongju; Du,

Hongming; Li, Dehui; Liang, Dadong
PATENT ASSIGNEE(S): Northeast Normal University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 13 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1616466	A	20050518	CN 2004-10011104	2004 0917

PRIORITY APPLN. INFO.: CN 2004-10011104 2004 0917

AB The invention relates to anti penicillin-resistant streptococcus pneumonia (PRSP) polyacid compds. and their preparation method, which falls into the field of chemical synthetic drugs and their preparation method. The polyacid compound in this invention is synthesized by self-assembly of clinic drugs such as amantadine, moroxydine, 5-Fu(5-Fc) and isoniazide with **polyoxometalate**, where the **polyoxometalate** includes heteropolyacid salts of Keggin type [XM12O40]n- (X = P, As, Si, Ge and M = Mo or W), Dowson type [X2M18O62]n- (X = P, As, Si, Ge etc. and M = Mo, W etc.), and [LnW10O36]n- (Ln = lanthanide). One or **combination** of more compds. prepared in this invention has outstanding curative effect on intractable streptococcus pneumonia infection which cannot be cured by antibiotics.

IT **864828-17-1P**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antibacterial activity of anti penicillin-resistant streptococcus pneumonia (prsp) heteropolyacid compds.)

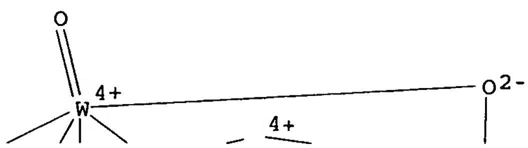
RN 864828-17-1 HCAPLUS

CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen, compd. with 5-fluoro-2,4(1H,3H)-pyrimidinedione (1:4) (9CI) (CA INDEX NAME)

CM 1

CRN 12027-38-2
CMF H . 1/4 O40 Si W12
CCI CCS

PAGE 1-A



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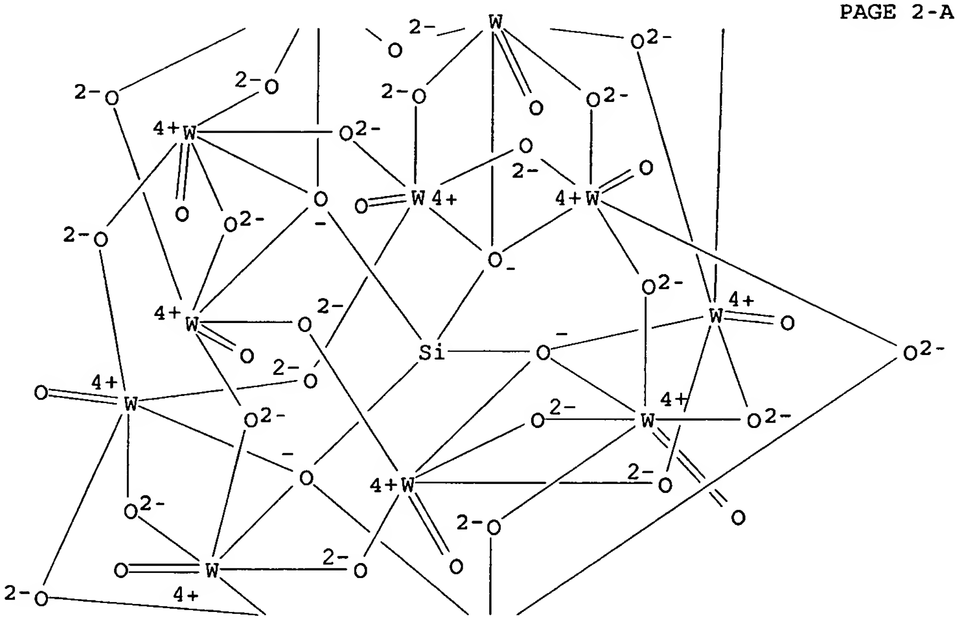

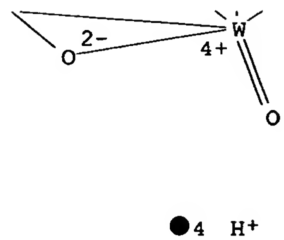

CM 2

CRN 51-21-8
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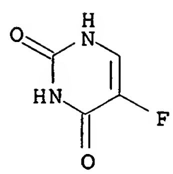
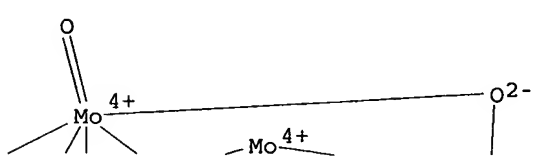


IT **12026-57-2**, H3PMo12O40 **12027-38-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and antibacterial activity of anti penicillin-resistant streptococcus pneumonia (prsp) heteropolyacid compds.)
RN 12026-57-2 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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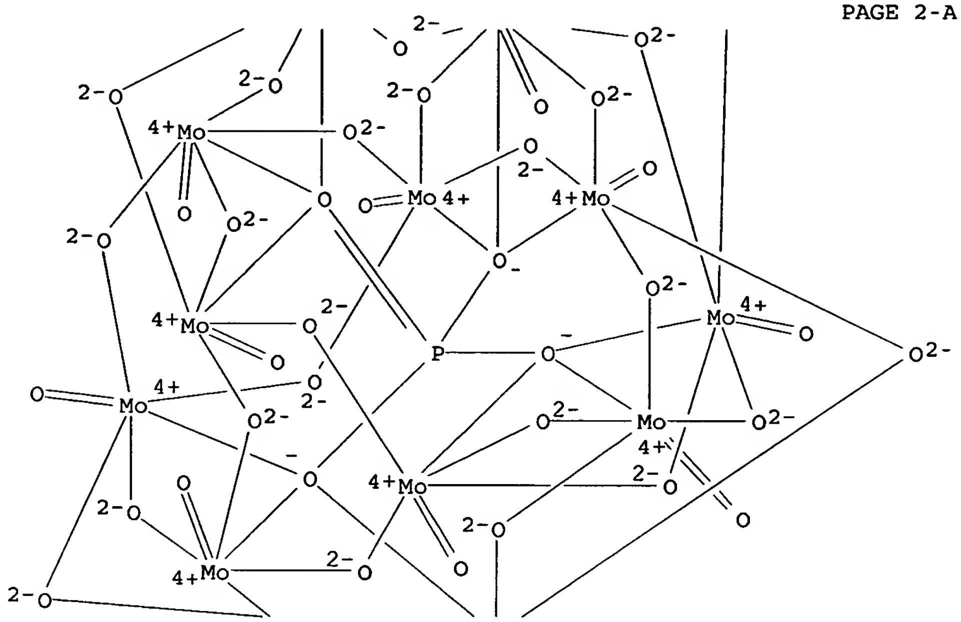

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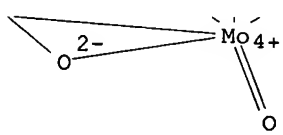
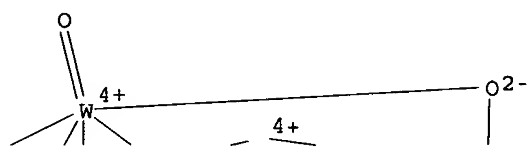


●3 H^+

RN 12027-38-2 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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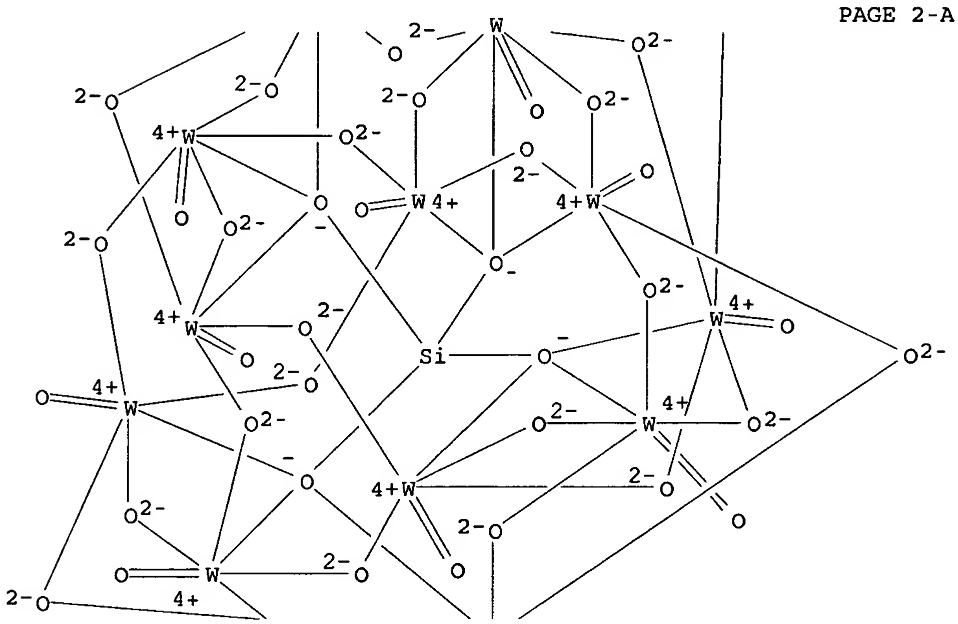

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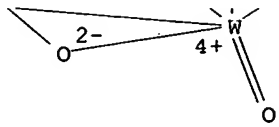


●4 H^+

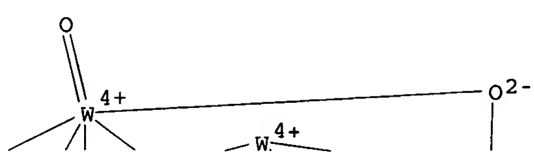
IC ICM C07F003-00
ICS C07F011-00; A61K031-66; A61K031-555; A61K031-28; A61P031-04
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 1, 10
ST anti penicillin resistant streptococcus pneumonia
polyoxometalate prepn antibacterial activity
IT **864828-17-1P** 870470-72-7P 870470-75-0P 870470-77-2P
870470-80-7P 870470-82-9P 870470-84-1P 870470-86-3P
870470-88-5P 870470-91-0P 870470-93-2P
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antibacterial activity of anti penicillin-resistant streptococcus pneumonia (prsp) heteropolyacid compds.)
IT 51-21-8, Fluril 54-85-3, Isoniazide 768-94-5, Amantadine
3731-59-7, Moroxydine **12026-57-2**, H3PMo12O40
12027-38-2 12411-74-4 63055-84-5 86045-29-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and antibacterial activity of anti penicillin-resistant streptococcus pneumonia (prsp) heteropolyacid compds.)

L114 ANSWER 2 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:537222 HCAPLUS
DOCUMENT NUMBER: 143:371895
TITLE: Study on the photodegradation of formaldehyde with PWn/TiO2 **composite** catalysts
AUTHOR(S): Gai, Tiejun; Lu, Xiaomeng; Deng, Qian; Xiao, Hanxi; Peng, Zhenshan
CORPORATE SOURCE: Dependent of Chemistry and Chemical Engineer, Hunan University of Science & Technology, Xiangtan, 411201, Peop. Rep. China
SOURCE: Huanjing Kexue Xuebao (2005), 25(5), 618-622
CODEN: HKXUDL; ISSN: 0253-2468
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB PWn/TiO2 **composite** catalysts were prepared by the method of sol-gel via calcination technique. Structure characterization was obtained by TG-DTA, FIR, BET sp. surface area, TPR, SEM, FL. Photocatalytic performance of **composite** catalysts was investigated with formaldehyde as test compound in a static photoreactor made of quartz glass. The results showed that PW12/TiO2 **composite** catalyst (calcinated at 350°C) kept complete Keggin structure, and the carriers effectively transferred from TiO2 to PW12, so PW12/TiO2 **composite** catalysts had better photocatalysis activity than pure TiO2 and that .tplbond. Ti-OH may combine with PW11 at its lacunary position, leading to structure change, so PW11/TiO2 **composite** catalysts had lower photocatalysis activity than PW12/TiO2. Photocatalysis reactions over two type **composite** catalysts accorded to L-H mechanism , which had first order kinetic equation. First-order reaction rate constant of PW12/TiO2 and PW11/TiO2 were 0.01243 min-1 and 0.005214 min-1.

IT 1343-93-7, 12-Tungsto Phospho ric acid
RL: CAT (Catalyst use); RGT (Reagent); RACT (Reactant or reagent); USES (Uses)
(photodegrdn. of formaldehyde with PW12/TiO2 **composite** catalysts)
RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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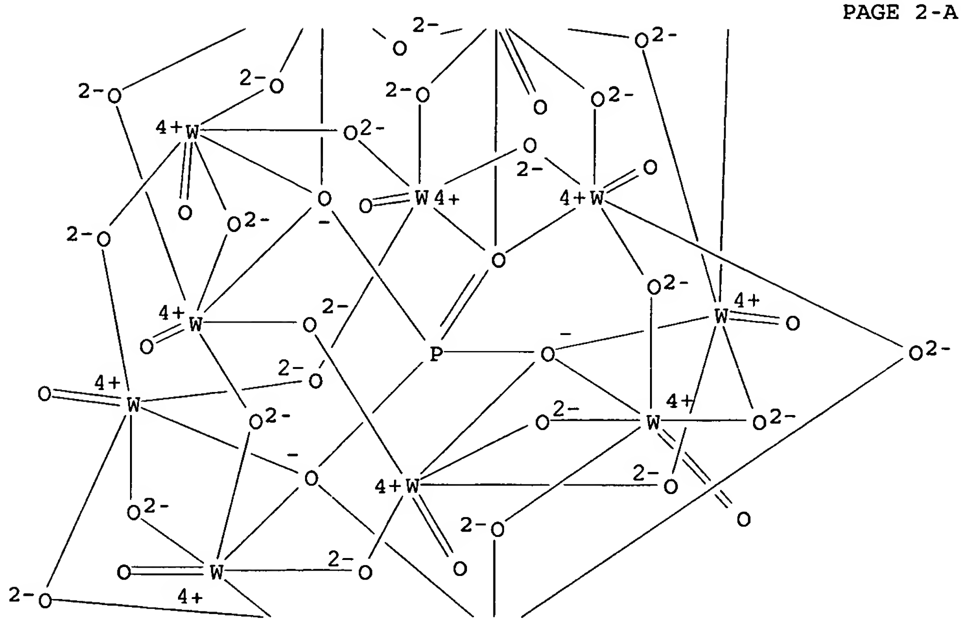
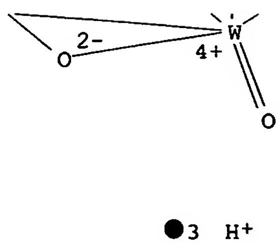


PAGE 3-A



CC 59-6 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67
ST photodegrdn formaldehyde PW12 titania **composite** catalyst
air purifn
IT Air purification
(photocatalytic oxidation; photodegrdn. of formaldehyde with
PW12/TiO2 **composite** catalysts)
IT 13463-67-7, Titania, uses
RL: CAT (Catalyst use); USES (Uses)
(photodegrdn. of formaldehyde with PW12/TiO2 **composite**
catalysts)
IT **1343-93-7**, 12-Tungsto Phospho ric acid 12412-84-9,
11-Phosphotungstic acid
RL: CAT (Catalyst use); RGT (Reagent); RACT (Reactant or reagent);
USES (Uses)
(photodegrdn. of formaldehyde with PW12/TiO2 **composite**
catalysts)
IT 50-00-0, Formaldehyde, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); POL (Pollutant); REM (Removal or disposal); OCCU
(Occurrence); PROC (Process)
(photodegrdn. of formaldehyde with PW12/TiO2 **composite**
catalysts)
IT 5593-70-4, Tetra butoxy titanium
RL: RGT (Reagent); RACT (Reactant or reagent)
(photodegrdn. of formaldehyde with PW12/TiO2 **composite**
catalysts)

L114 ANSWER 3 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:515250 HCAPLUS
TITLE: Vanadium-substituted Dawson-type **polyoxometalates** as versatile electrocatalysts
AUTHOR(S): Keita, Bineta; Mbomekalle, Israel-Martyr; Nadjo, Louis; de Oliveira, Pedro; Ranjbari, Alireza; Contant, Roland
CORPORATE SOURCE: Electrochimie et Photoelectrochimie, UMR 8000, CNRS, Laboratoire de Chimie Physique, universite Paris-Sud, Orsay, 91405, Fr.
SOURCE: Comptes Rendus Chimie (2005), 8(6-7), 1057-1066
CODEN: CRCOCR; ISSN: 1631-0748
PUBLISHER: Editions Scientifiques et Medicales Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A selected series of mono- and multi- V-substituted derivs. of
Dawson type structure were synthesized and characterized with the
aim of **exploring** their electrochem. and their
electrocatalytic abilities. The focus was placed on the
electrochem. of [P2V2W16O62]8- as a representative example. The

redox processes of its two V-centers were observed in a potential domain well pos. of those of the W-centers. They are pH-dependent, the first redox process exhibiting only modest and progressively smaller potential shifts from pH 0 to 4, while the second wave was far more sensitive to acidity changes from pH 0 to 8. In contrast, mono-substituted derivs. display very small or no pH-dependence of the V-wave. Finally, **combination** of this diversity in the number of V atoms with the presence of As or P as the central heteroatom in these tungstic and molybdo-tungstic structures modulates substantially the apparent formal potentials that span the range from + 569 mV to + 122 mV vs SCE at pH 7. This leaves considerable flexibility in the choice of POMs for electrocatalytic purposes. The homogeneous oxidation and the electrocatalytic reduction of nitrite and the electrocatalytic oxidation of NAD(P)H by an appropriate selection of these V-substituted anions were studied.

IT **85585-38-2**
RL: CAT (Catalyst use); USES (Uses)
(vanadium-substituted Dawson-type **polyoxometalates** as versatile electrocatalysts)

RN 85585-38-2 HCAPLUS

CN Vanadate(8-), [nonacosa-μ-oxohexadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]hexadecatungstate]hepta-μ-oxodioxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]di- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CC 72-2 (Electrochemistry)
Section cross-reference(s): 78, 67

ST **polyoxometalates** Dawson structure vanadium substituted electrocatalysts nitrite redn oxidn; electrocatalytic oxidn NADPH

IT Catalysts
(electrocatalysts; vanadium-substituted Dawson-type **polyoxometalates** as versatile electrocatalysts)

IT Cyclic voltammetry
(of glassy carbon electrode modified with vanadium-substituted Dawson-type **polyoxometalates** in acidic media)

IT Reduction potential
(of vanadium in vanadium-substituted Dawson-type **polyoxometalates** in acidic media)

IT UV and visible spectra
(of vanadium-substituted Dawson-type **polyoxometalates** in buffer solns. containing NaNO2 during electrochem. scanning)

IT Heteropoly acids
RL: CAT (Catalyst use); USES (Uses)
(vanadium-substituted Dawson-type **polyoxometalates** as versatile electrocatalysts)

IT **85585-38-2**
RL: CAT (Catalyst use); USES (Uses)
(vanadium-substituted Dawson-type **polyoxometalates** as versatile electrocatalysts)

IT 53-57-6, NAD(P)H
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(vanadium-substituted Dawson-type **polyoxometalates** as versatile electrocatalysts for oxidation of)

REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 4 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:336064 HCAPLUS
DOCUMENT NUMBER: 143:45990

TITLE: Proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alcohol) for DMFC applications

AUTHOR(S): Lin, C. W.; Thangamuthu, R.; Yang, C. J.
CORPORATE SOURCE: Department of Chemical Engineering, National Yunlin University of Science and Technology, Yunlin, 640, Taiwan

SOURCE: Journal of Membrane Science (2005), 253(1-2), 23-31
CODEN: JMESDO; ISSN: 0376-7388
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

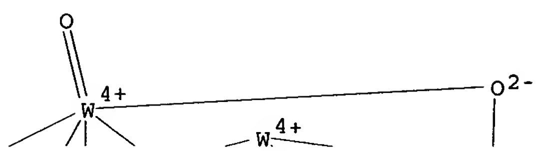
AB Proton-conducting hybrid membranes composed of poly(vinyl alc.) (PVA) and phosphotungstic acid (PWA) were prepared by solution-**blending.** The effect of PWA **doping** on the membrane properties such as water uptake, ion-exchange capacity (IEC), proton conductivity and methanol permeability was studied. Up to 20 weight % PWA content, both water uptake and methanol permeability slightly increased then decreased continuously until 90%. FTIR spectra indicate that a significant amount of PWA was maintained in the polymer matrix even after several hours of immersion in water. Combining FTIR results and the similarity in water uptake and methanol permeability of PVA/PWA hybrid membranes suggests that the variations in associated properties are ascribed to intermol. hydrogen bonding interaction between hydroxyl groups of PVA and PWA. Methanol permeabilities of hybrid membranes were significantly lower than that of Nafion 115. The proton conductivity of hybrid membranes was in the order of 10-4 S cm-1 and generally increases with PWA content. Finally, the possibility of PVA/PWA hybrid membranes for use in PEMFC was **explored.** In H2/O2 mode, the performance increases with PWA content and a maximum c.d. of 46 mA cm-2 was obtained with PVA 20% and PWA 80% (PVA20PWA80) sample. Performance of the DMFC with PVA20PWA80 increases with temperature and reached to 80 mA cm-2 at 80 °C.

IT **1343-93-7**, Phosphotungstic acid
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(**composite blends** with polyvinyl alc.; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)

RN 1343-93-7 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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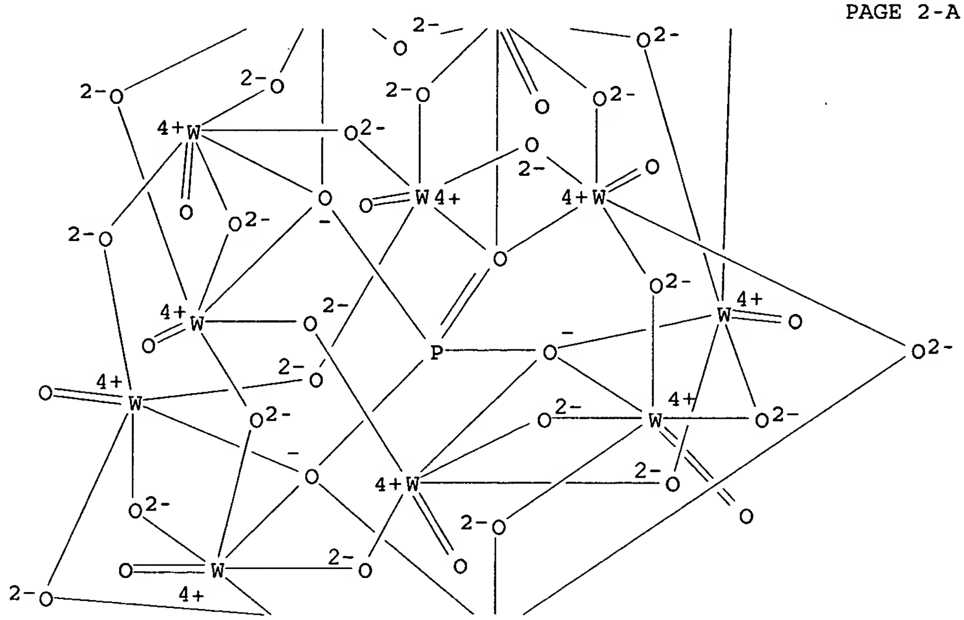

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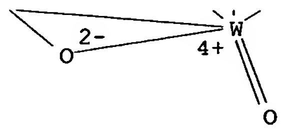


●3 H^+

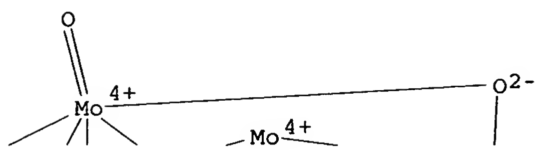
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
ST proton conducting membrane methanol permeability phosphotungstic acid **doped**; poly vinyl alc heteropoly acid **doped** fuel cell membrane
IT Cation exchange
(PWA acid content effect on; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Carbon fibers, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(cloth, Teflon-coated fibers; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**composites** with heteropolyacids; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Membranes, nonbiological
(elec. conductive; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(fluorine- and sulfo-containing, ionomers; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Electric current-potential relationship
(of assembled fuel cells; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Membranes, nonbiological
(permselective; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Fluoropolymers, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Ionomers
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Electric energy
(power d. of assembled fuel cells; proton-conducting membranes

with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Fuel cells
(proton exchange membrane; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Cation exchange membranes
Current density
Doping
Hydrogen bond
Membrane electrodes
(proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Ionic conductivity
(proton; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Permeability
(to methanol; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT Swelling, physical
(with water; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT **1343-93-7**, Phosphotungstic acid
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(**composite blends** with polyvinyl alc.; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT 9003-20-7D, Poly(vinyl acetate), 99% hydrolyzed
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(d.p. 2020-2224, **composite blends** with phosphotungstic acid; proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT 67-56-1, Methanol, uses
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT 77950-55-1, Nafion 115
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT 7440-06-4, Platinum, uses 7440-44-0, Carbon, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC applications)
IT 7732-18-5, Water, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(proton-conducting membranes with high selectivity from phosphotungstic acid-**doped** poly(vinyl alc.) for DMFC

applications)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 5 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:250678 HCAPLUS
DOCUMENT NUMBER: 142:437700
TITLE: Effective charge transport in poly(3,4-ethylenedioxythiophene) based hybrid films containing **polyoxometalate** redox centers
AUTHOR(S): Adamczyk, Lidia; Kulesza, Pawel J.; Miecznikowski, Krzysztof; Palys, Barbara; Chojak, Malgorzata; Krawczyk, Dorota
CORPORATE SOURCE: Department of Materials and Process Engineering and Applied Physics, Czestochowa University of Technology, Czestochowa, PL-42-200, Pol.
SOURCE: Journal of the Electrochemical Society (2005), 152(3), E98-E103
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Electrodeposition and electrochem. charging of hybrid organic/inorg. films composed of the poly(3,4-ethylenedioxythiophene), PEDOT, conducting polymer matrix, and Keggin type **polyoxometalate**, phosphododecamolybdate (PMo12O403-) or phosphododecatungstate (PW12O403-), redox centers, are described under conditions of aqueous solns. The systems are electropolymd. through potential cycling as thin and moderately thick (μm level) films on electrode surfaces. They are capable of fast charge propagation during redox reactions in strong acid medium (0.5 mol dm-3 H2SO4). The high overall physicochem. stability of PEDOT is **explored** to produce a robust, conductive, matrix for such polynuclear **mixed**-valence inorg. nanostructures as PMo12O403- and PW12O403-. The **composite** (hybrid) materials are stabilized due to the existence of electrostatic attraction between anionic phosphomolybdate or phosphotungstate units and pos. charged conducting polymer (oxidized). Charge transport is facilitated by the fact that the reversible and fast redox reactions of **polyoxometalate** appear in the potential range where PEDOT is conductive. The effective diffusion coeffs. are on the level 4 + 10-8 cm2 s-1. The whole concept may lead to the fabrication of **composite** (hybrid) films that are capable of effective accumulation and propagation of charge in redox capacitors.
IT **12379-13-4 12534-77-9**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(cyclic voltammetry of poly(ethylenedioxythiophene) containing molybdophosphate or tungstophosphate in H2SO4 solution effective charge transport in hybrid films)
RN 12379-13-4 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca- (9CI) (CA INDEX NAME)

PAGE 1-A



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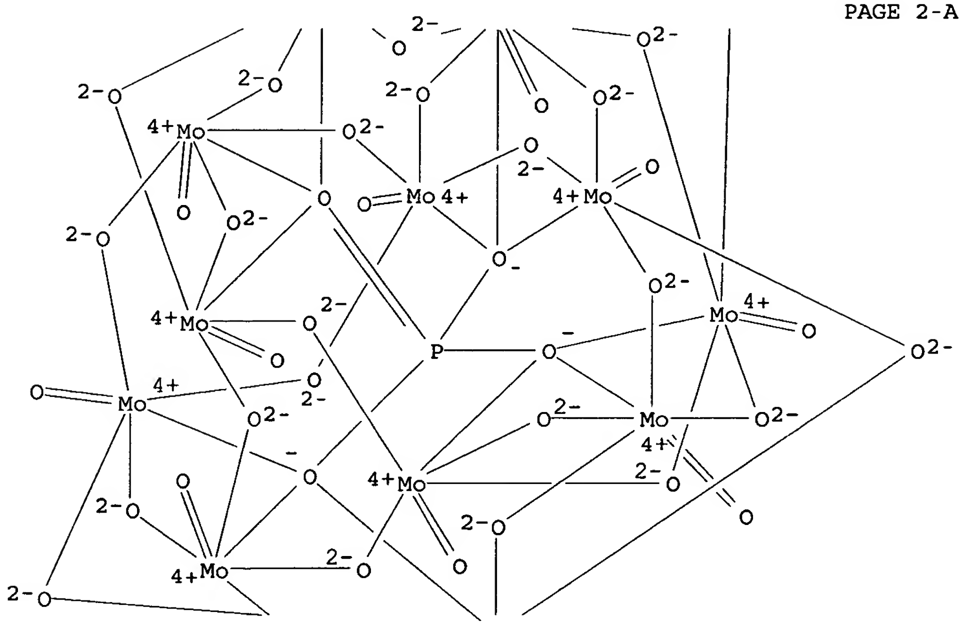

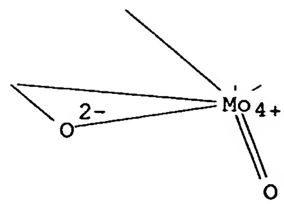

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RN 12534-77-9 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca- (9CI) (CA INDEX NAME)

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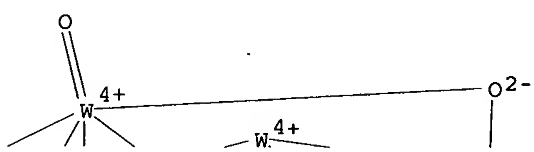

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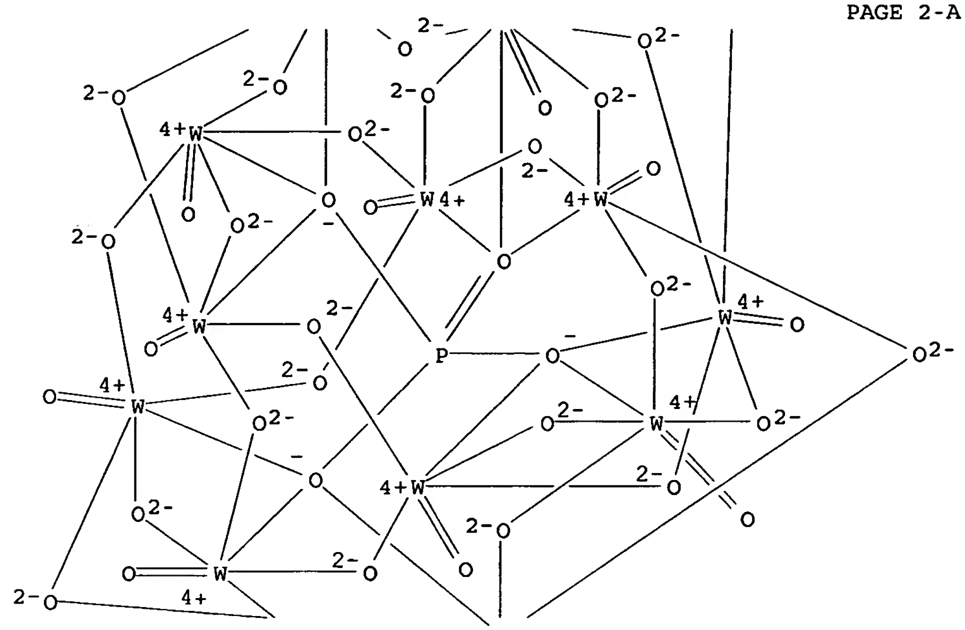

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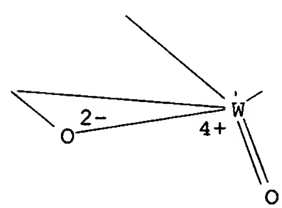
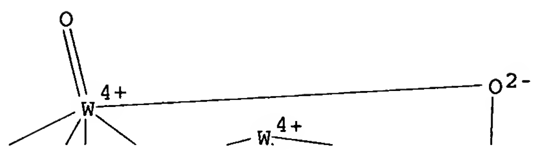


IT **1343-93-7**, Tungstophosphoric acid H3PW12O40
12026-57-2, Molybdophosphoric acid h3pmo12o40
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(electrochem. polymerization of ethylenedioxythiophene in aqueous solution containing H3PMo12O40 and H3PW12O40 and effective charge transport in poly(ethylenedioxythiophene) based hybrid films containing **polyoxometalate** redox centers)

RN 1343-93-7 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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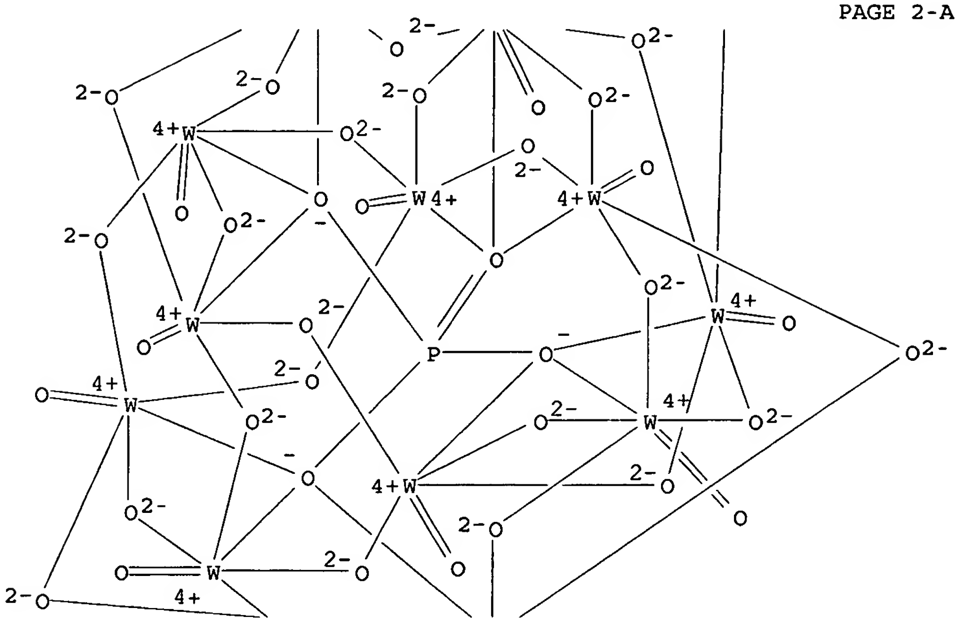

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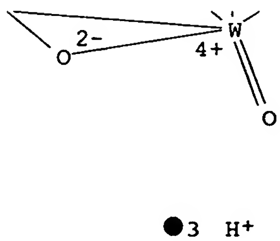
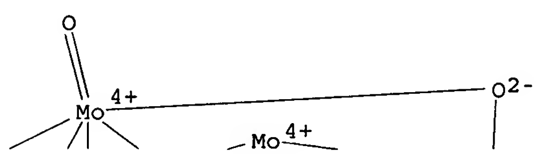


RN 12026-57-2 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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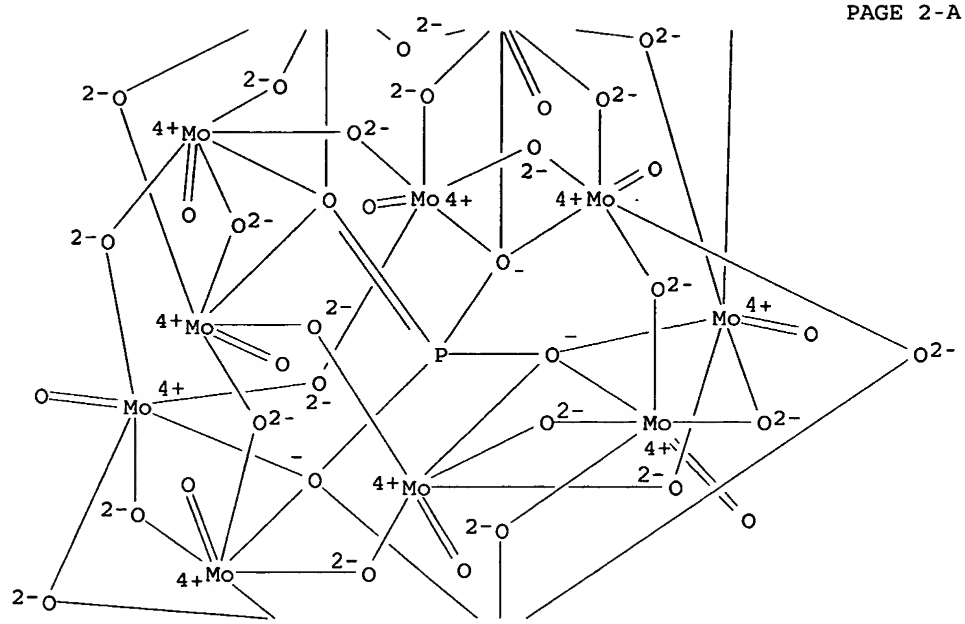

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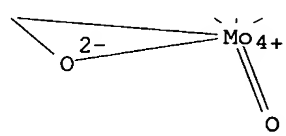


●3 H^+

CC 72-2 (Electrochemistry)
Section cross-reference(s): 35, 36, 67, 78

ST effective charge transport polyethylenedioxythiophene hybrid film **polyoxometalate** center; electropolymn ethylenedioxythiophene molybdophosphoric tungstophosphoric acid

IT Polymerization
(electrochem.; of ethylenedioxythiophene in aqueous solution containing H3PMo12O40 and H3PW12O40 and effective charge transport in poly(ethylenedioxythiophene) based hybrid films containing **polyoxometalate** redox centers)

IT Redox reaction
(electrochem.; of molybdophosphate or tungstophosphate in poly(ethylenedioxythiophene) films in H2SO4 solution and effective charge transport in poly(ethylenedioxythiophene) based hybrid films containing **polyoxometalate** redox centers)

IT Reduction, electrochemical
(of molybdophosphate or tungstophosphate in poly(ethylenedioxythiophene) films in H2SO4 solution and effective charge transport in poly(ethylenedioxythiophene) based hybrid films containing **polyoxometalate** redox centers)

IT **12379-13-4 12534-77-9**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(cyclic voltammetry of poly(ethylenedioxythiophene) containing molybdophosphate or tungstophosphate in H2SO4 solution effective charge transport in hybrid films)

IT 126213-50-1, 3,4-Ethylenedioxythiophene
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. polymerization in aqueous solution containing molybdophosphoric acid or tungstophosphoric acid and effective charge transport in poly(ethylenedioxythiophene) based hybrid films containing **polyoxometalate** redox centers)

IT **1343-93-7**, Tungstophosphoric acid H3PW12O40
12026-57-2, Molybdophosphoric acid h3pmo12o40
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(electrochem. polymerization of ethylenedioxythiophene in aqueous solution containing H3PMo12O40 and H3PW12O40 and effective charge transport in poly(ethylenedioxythiophene) based hybrid films containing **polyoxometalate** redox centers)

REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 6 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:102386 HCAPLUS
DOCUMENT NUMBER: 142:338886
TITLE: Preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts
AUTHOR(S): Kim, Won Bae; Voitl, Tobias; Rodriguez-Rivera, Gabriel J.; Evans, Steven T.; Dumesic, James A.
CORPORATE SOURCE: Chemical and Biological Engineering Department, University of Wisconsin, Madison, WI, 53706, USA
SOURCE: Angewandte Chemie, International Edition (2005), 44(5), 778-782
CODEN: ACIEF5; ISSN: 1433-7851
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

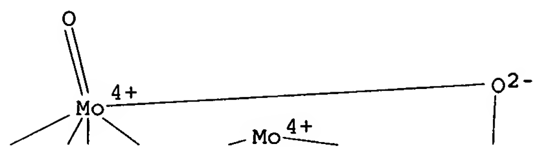
AB Stream **cleaning**: CO in CO/H2 **mixts.** is oxidized preferentially at room temperature with an aqueous **polyoxometalate** (POM) solution over gold catalysts. The rate of H2 oxidation is slow and is inhibited by CO. This process can be used to remove CO efficiently from H2 gas streams. The solution containing protons and reduced POM can be used to produce elec. energy at a fuel-cell anode through reoxidn. of the reduced POM.

IT **12026-57-2**, Dodecamolybdophosphoric acid
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
(preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)

RN 12026-57-2 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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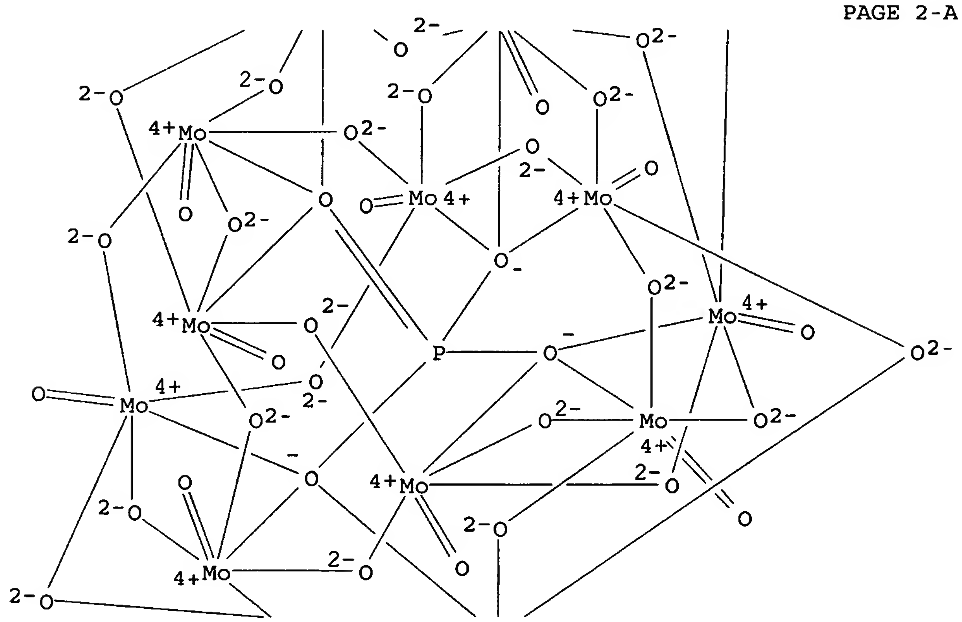

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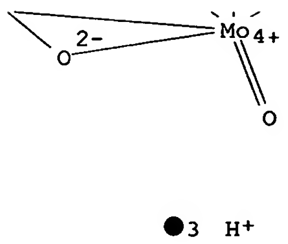

CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 67
ST preferential oxidn carbon monoxide **polyoxometalate** metal heterogeneous catalysis; fuel cell stream **cleanup** selective oxidn catalyst heteropoly acid
IT Nanoparticles
(catalyst; preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT Reduction
(of **polyoxometalate**; preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT Fuel cell anodes
(preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT Heteropoly acids
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT Oxidation, electrochemical
(reoxidn. of **polyoxometalate**; preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT Oxidation
Oxidation catalysts
Oxidation kinetics
(selective; preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT 7440-44-0, Carbon, uses
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(catalyst support; preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT 7440-57-5, Gold, uses
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(nanotubes; preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT 7440-15-5P, Rhenium, uses 7440-17-7P, Rubidium, uses 7440-22-4P, Silver, uses
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(preferential oxidation of CO in H2 by aqueous **polyoxometalates** over metal catalysts)
IT 630-08-0, Carbon monoxide, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); REM (Removal or disposal); PROC (Process)
(preferential oxidation of CO in H2 by aqueous
polyoxometalates over metal catalysts)

IT **12026-57-2**, Dodecamolybdophosphoric acid
RL: FMU (Formation, unclassified); RCT (Reactant); FORM
(Formation, nonpreparative); RACT (Reactant or reagent)
(preferential oxidation of CO in H2 by aqueous
polyoxometalates over metal catalysts)

IT 1333-74-0, Hydrogen, reactions
RL: OCU (Occurrence, unclassified); RCT (Reactant); OCCU
(Occurrence); RACT (Reactant or reagent)
(preferential oxidation of CO in H2 by aqueous
polyoxometalates over metal catalysts)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 7 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:15474 HCAPLUS
DOCUMENT NUMBER: 142:359869
TITLE: Screening of **polyoxometalates**, semiconductor metal oxides and zeolites for photocatalytic activity and selectivity
AUTHOR(S): Arslan-Alaton, Idil; Selcuk, Huseyin; Erdem-Senatalar, Ayse
CORPORATE SOURCE: Faculty of Civil Engineering, Department of Environmental Engineering, Istanbul Technical University, Istanbul, 34469, Turk.
SOURCE: Fresenius Environmental Bulletin (2004), 13(11b, y), 1248-1252
CODEN: FENBEL; ISSN: 1018-4619
PUBLISHER: PSP - Parlar Scientific Publications
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This study reports the treatment performance and selectivity of 2 photochem. active materials, namely TiO2 (1 g/L, pH 2.8) and the heteropolyacid H4SiW12O40 (1.44 g/L or 0.5mM in aqueous solution, pH 2.8) for the oxidation of phenol, iso-Pr alc. and formic acid selected as the recalcitrant index **pollutants**, using UV-C (20 W) and UV-A (125 W) light sources in 2 different photoreactors. In sep. expts., the effect of the zeolites Y (1 g/L; Si/Al =5.2/1 and 80/1) and Beta (1 g/L; Si/Al =75/1) as TiO2 and H4SiW12O40 catalyst supports was studied under the same reaction conditions. It could be demonstrated that H4SiW12O40 is more selective than TiO2, especially for the charge transfer type isopropanol oxidation It was also found that the zeolitic supports improved the photocatalytic activity of **polyoxometalates** (POM) with a pronounced effect for UV-C (short-UV) irradiation A significantly reduced photoactivity (12.5% for UV-A and 9.5% for UV-C) in comparison with TiO2-mediated photocatalysis was observed for the **combination** POM + TiO2, speculatively due to the conduction band electron short-circuit effect of POM, i.e. ecb + POM → POMred.

IT **12027-38-2**
RL: CAT (Catalyst use); USES (Uses)
(screening of **polyoxometalates** and semiconductor metal oxides and zeolites for photocatalytic activity and selectivity)

RN 12027-38-2 HCAPLUS

CN Tungstate(4-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]tetra
cosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX
NAME)

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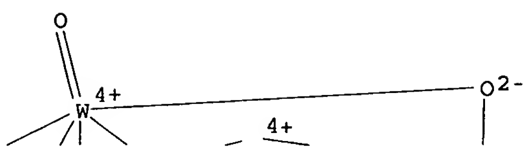
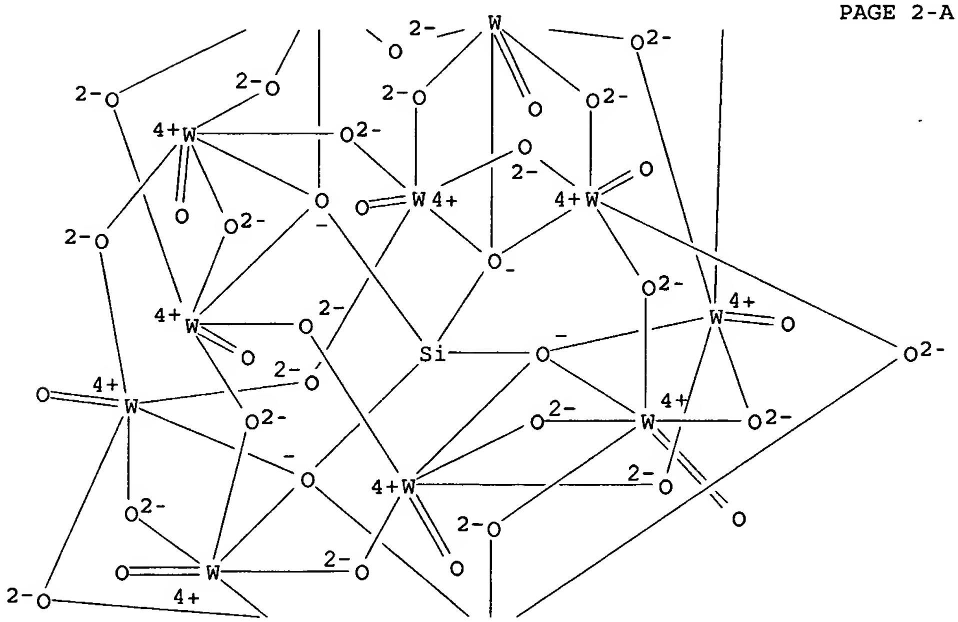


PAGE 2-A



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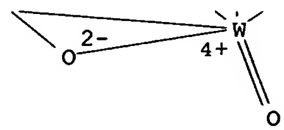


●4 H+

CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): 67
ST **polyoxometalate** semiconductor metal oxide zeolite photocatalysis
IT Wastewater treatment
(photocatalytic; screening of **polyoxometalates** and semiconductor metal oxides and zeolites for photocatalytic activity and selectivity)
IT Catalysis
Catalysts
(photochem.; screening of **polyoxometalates** and semiconductor metal oxides and zeolites for photocatalytic activity and selectivity)
IT Catalyst supports
(screening of **polyoxometalates** and semiconductor metal oxides and zeolites for photocatalytic activity and selectivity)
IT H-Beta zeolites
Heteropoly acids
Oxides (inorganic), uses
Y zeolites
Zeolite NaY
Zeolites (synthetic), uses
RL: CAT (Catalyst use); USES (Uses)
(screening of **polyoxometalates** and semiconductor metal oxides and zeolites for photocatalytic activity and selectivity)
IT **12027-38-2** 13463-67-7, Titania, uses
RL: CAT (Catalyst use); USES (Uses)
(screening of **polyoxometalates** and semiconductor metal oxides and zeolites for photocatalytic activity and selectivity)
IT 64-18-6, Formic acid, processes 67-63-0, Iso-propyl alcohol, processes 108-95-2, Phenol, processes
RL: REM (Removal or disposal); PROC (Process)
(screening of **polyoxometalates** and semiconductor metal oxides and zeolites for photocatalytic activity and selectivity)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 8 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:5417 HCAPLUS
DOCUMENT NUMBER: 142:359724
TITLE: Method for desulfurizing and denitrifying flue gas simultaneously
INVENTOR(S): Wang, Rui
PATENT ASSIGNEE(S): Hainan University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent

LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1478588	A	20040303	CN 2003-147304	20030704
PRIORITY APPLN. INFO.:			CN 2003-147304	20030704

AB The absorbent of heteropoly acid or its reduced form for desulfurizing and denitrifying flue gas simultaneously is prepared from phosphate or silicate, molybdate, and tungstate. The additive (such as NaCl, CuSO4, H3PO4, ZnSO4, MnSO4, CuS, and/or NH4VO3) may be **mixed** with the absorbent .

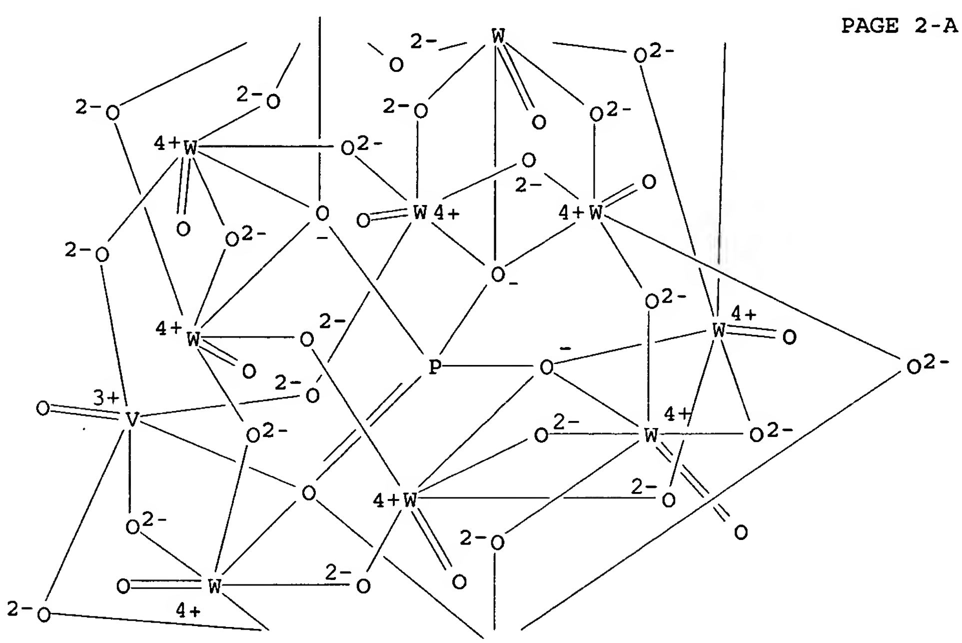
IT **12398-73-1P**
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(method for desulfurizing and denitrifying flue gas simultaneously using heteropoly acid absorbent)

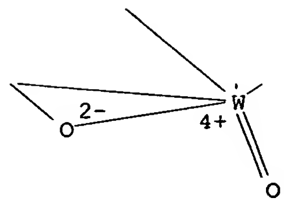
RN 12398-73-1 HCAPLUS

CN Vanadate(4-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, tetrahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





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●4 H+

IC ICM B01D053-78
ICS B01D053-60
CC 59-4 (**Air Pollution** and Industrial Hygiene)
IT **12398-73-1P** 63950-64-1P 477978-49-7P
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(method for desulfurizing and denitrifying flue gas simultaneously using heteropoly acid absorbent)

L114 ANSWER 9 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1119124 HCAPLUS
DOCUMENT NUMBER: 142:231812
TITLE: Synthesis, optical properties and electronic structures of **polyoxometalates** K3P(Mo1-xWx)12040 (0≤x≤1)
AUTHOR(S): Goubin, F.; Guenee, L.; Deniard, P.; Koo, H.-J.; Whangbo, M.-H.; Montardi, Y.; Jobic, S.
CORPORATE SOURCE: Institut des Materiaux Jean Rouxel, Laboratoire de Chimie des Solides, BP 32229, UMR 6502 CNRS-Universite de Nantes, Nantes, 44322, Fr.
SOURCE: Journal of Solid State Chemistry (2004), 177(12), 4528-4534
CODEN: JSSCBI; ISSN: 0022-4596
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Various **compns.** of solid solns. K3P(Mo1-xWx)12040 (0≤x≤1) were prepared using two solid state synthetic routes. The crystallite size was determined by linewidth refinements of x-ray diffraction patterns using the **Warren**-Averbach method, and the grain size distribution by laser scattering expts. Optical properties were determined by diffuse reflectance measurements in the UV-visible range. The optical gap Eg increases exponentially from .apprx.2.5 to .apprx.3.30 eV with increasing x, and is systematically shifted to a higher energy when the grain size decreases. The relation between Eg and x was analyzed by calculating the HOMO-LUMO gaps of the [P(Mo1-xWx)12040]3- anions from tight-binding electronic structure calcns.
IT **1343-93-7**, 12-Tungstophosphoric acid **12026-57-2**, 12-Molybdophosphoric acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of solid solns. of molybdophosphates with tungstophosphates)
RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

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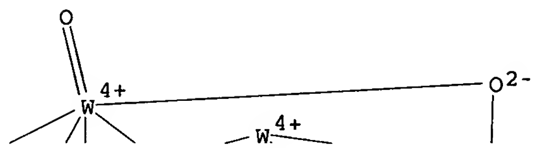

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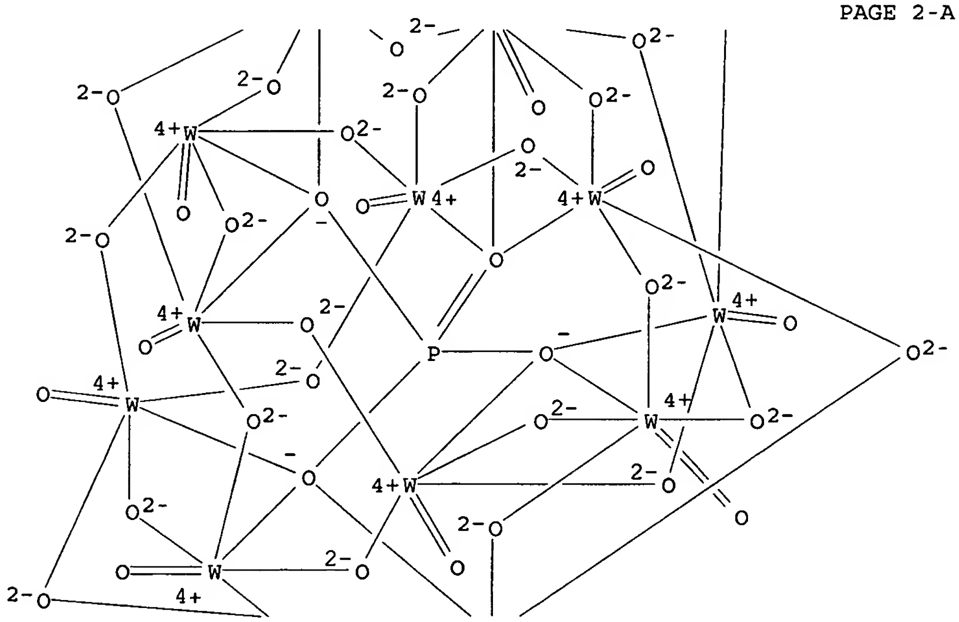

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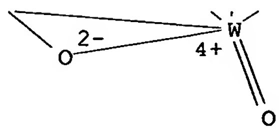

● 3 H^+

RN 12026-57-2 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

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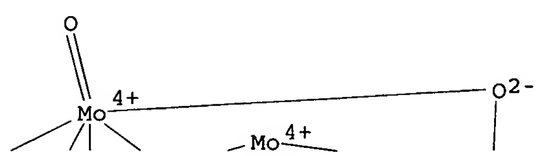

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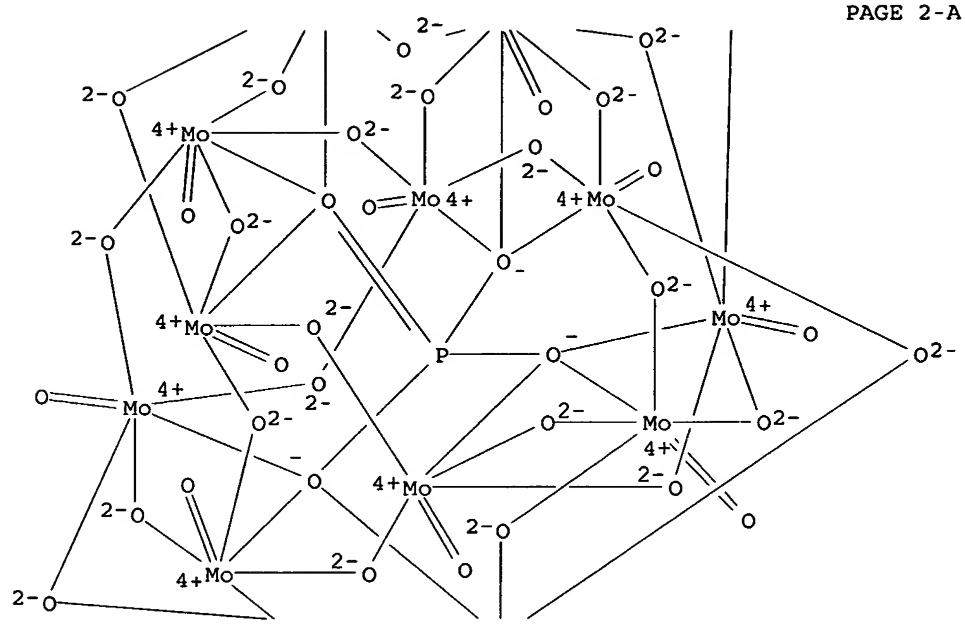

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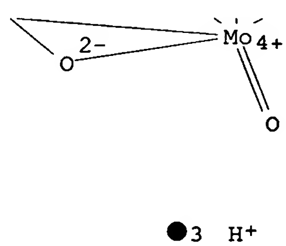

IT **12026-68-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation via acid route vs. oxide route, particle size distribution and reflectance spectrum of)
RN 12026-68-5 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, tripotassium (9CI) (CA INDEX NAME)

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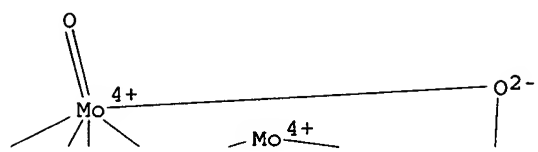

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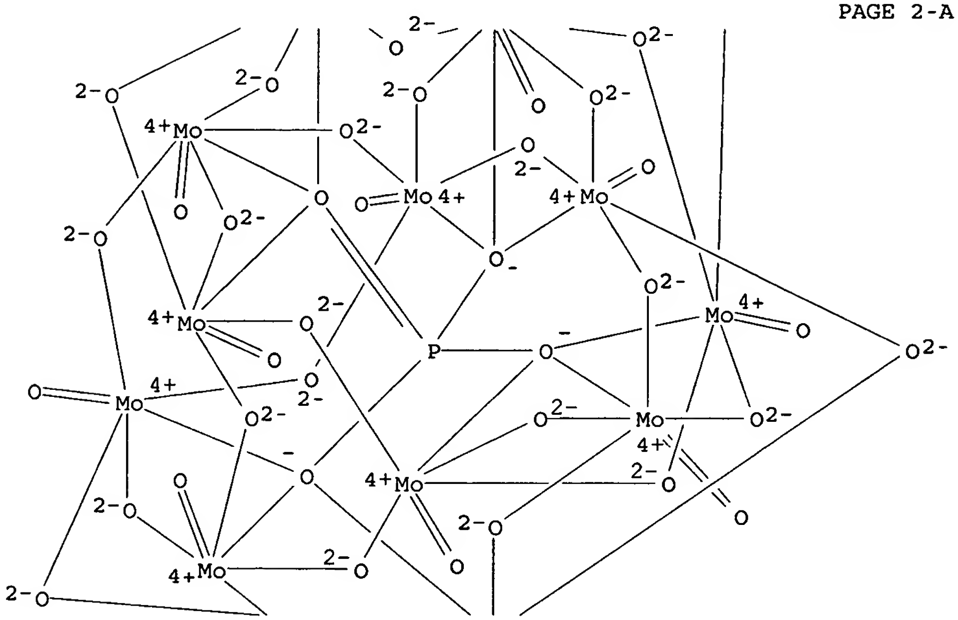

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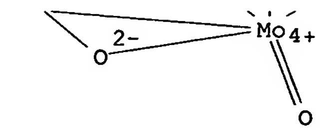

●3 K+

IT 12026-68-5DP, solid solns. with tungsten analog
12207-66-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation, crystal structure, optical properties and electronic structures of)

RN 12026-68-5 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, tripotassium (9CI) (CA INDEX NAME)

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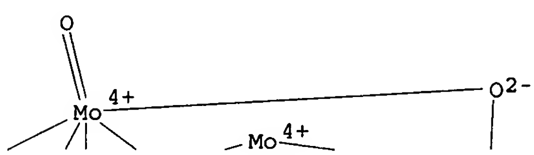

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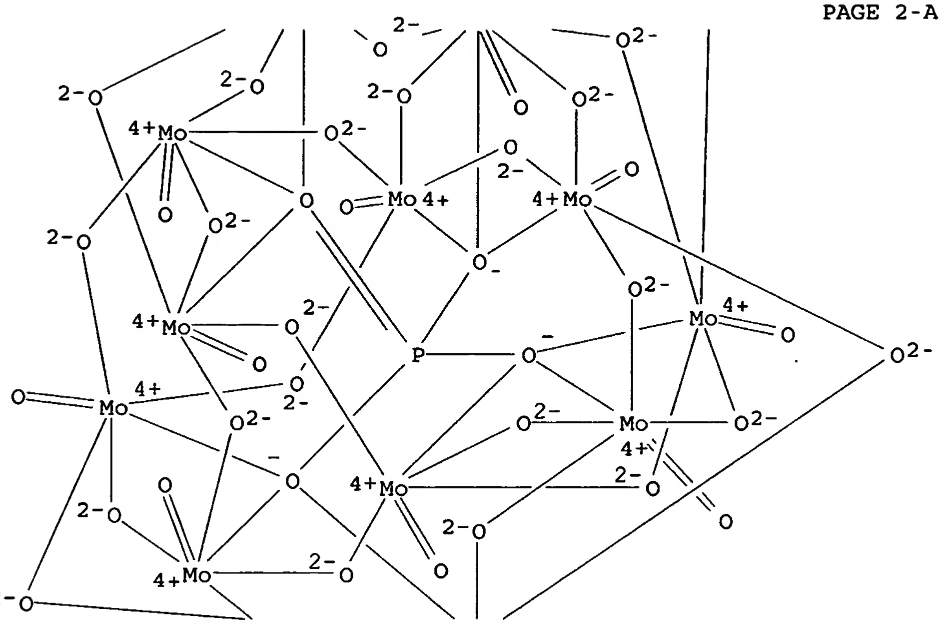

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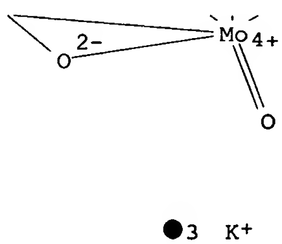

RN 12207-66-8 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, tripotassium (9CI) (CA INDEX NAME)

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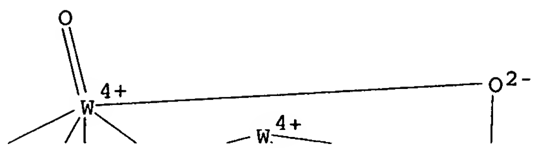

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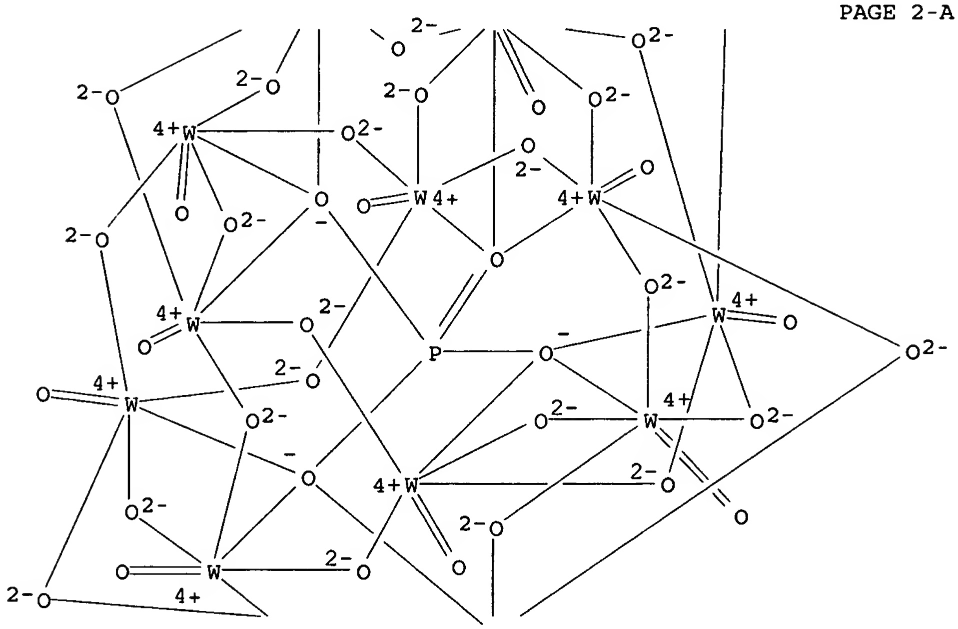

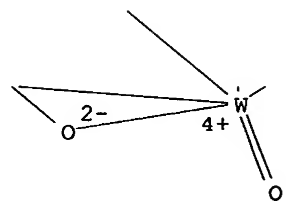

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●3 K+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT 584-08-7, Potassium carbonate (K2CO3) 1313-27-5, Molybdenum oxide (MoO3), reactions 1314-35-8, Tungsten oxide (WO3), reactions **1343-93-7**, 12-Tungstophosphoric acid 7758-11-4, Potassium phosphate (K2HPO4) **12026-57-2**, 12-Molybdophosphoric acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of solid solns. of molybdophosphates with tungstophosphates)
IT **12026-68-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation via acid route vs. oxide route, particle size distribution and reflectance spectrum of)
IT **12026-68-5DP**, solid solns. with tungsten analog
12207-66-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation, crystal structure, optical properties and electronic structures of)
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 10 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1068364 HCAPLUS
DOCUMENT NUMBER: 142:284416
TITLE: Efficient degradation of dye **pollutants** on nanoporous polyoxotungstate-anatase **composite** under visible-light irradiation
AUTHOR(S): Yang, Yu; Wu, Qingyin; Guo, Yihang; Hu, Changwen; Wang, Enbo
CORPORATE SOURCE: Faculty of Chemistry, Northeast Normal University, Changchun, 130024, Peop. Rep. China
SOURCE: Journal of Molecular Catalysis A: Chemical (2005), 225(2), 203-212
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel photocatalyst, nanoporous anatase TiO2 crystalline particles coupled by homogeneously dispersed Keggin unit, H3PW12O40/TiO2, was prepared by a simple and rapid process, i.e., at a lower temperature (200°) by combined sol-gel and programmed temperature hydrothermal methods. The resulting material was characterized by UV diffuse reflectant spectroscopy, XRD, 31P MAS NMR, TEM, and N adsorption. This new photocatalyst exhibited visible-light photocatalytic activity to decompose 10 various organic dyes in aqueous

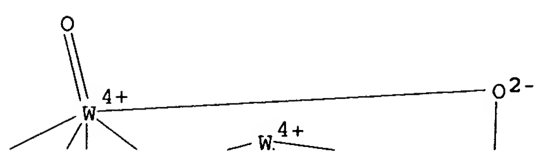
systems. It was attempted to determine the feasibility of such a degradation by varying the chemical structures, either azoic (Congo Red, Methyl orange, Ponceau G, Orange II, and Eriochrome Blue Black B), or anthraquinonic (Alizarin S), or heteropolyarom. (Methylene Blue), or fluorescent (Neutral Red, Rhodamine B), or sulfonic (Fuchsin Acid). The intermediates and the final products of degradation were detected by electrospray mass spectrometer and ion chromatog. According to the exptl. results, we proposed a possible mechanism of the photodegrdn. of dyes under visible-light irradiation in the aqueous system.

IT **1343-93-7DP**, Tungstophosphoric acid (H3PW12O40), titania coupled with
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and characterization of nanoporous anatase TiO2 coupled by H3PW12O40 and its activity as photocatalyst for degradation of dyes in aqueous systems under visible-light irradiation)

RN 1343-93-7 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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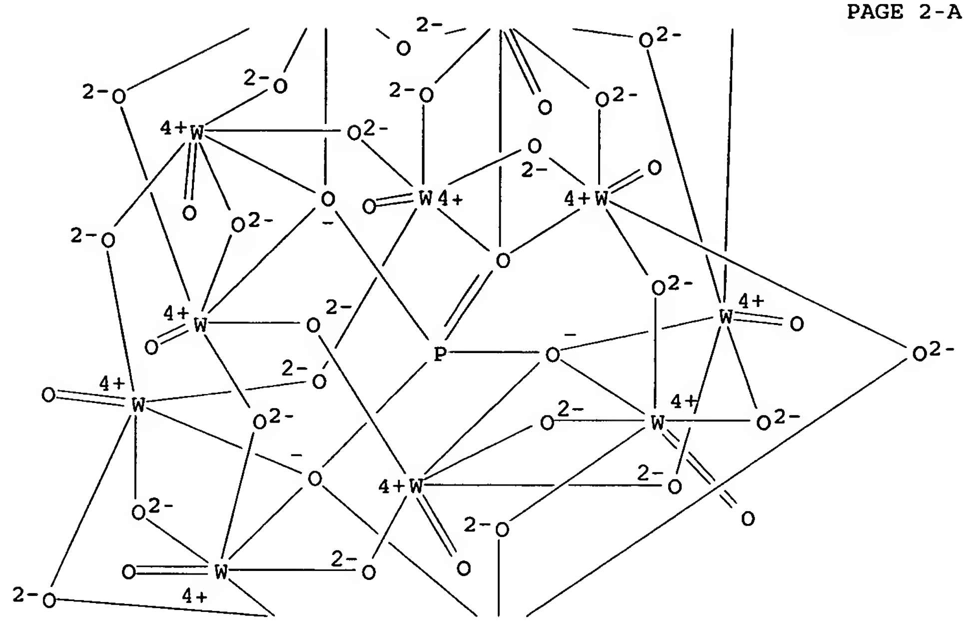
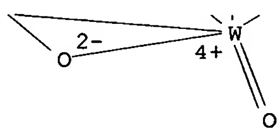


PAGE 3-A



●3 H^+

CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): 22, 41, 67, 74

ST photocatalyst nanoporous anatase titania polyoxotungstate **composite** prepn; wastewater dye photodegrdn catalyst polyoxotungstate anatase nanoporous **composite**

IT **1343-93-7DP**, Tungstophosphoric acid (H3PW12O40), titania coupled with 13463-67-7DP, Titania, coupled by H3PW12O40
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and characterization of nanoporous anatase TiO2 coupled by H3PW12O40 and its activity as photocatalyst for degradation of dyes in aqueous systems under visible-light irradiation)

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 11 OF 64 HCAPLUS

ACCESSION NUMBER: 2004:1022769 HCAPLUS
DOCUMENT NUMBER: 143:288170
TITLE: Use of an interactive carbohydrate polymer phenomenon for the separation of **polyoxometalates**
AUTHOR(S): Ruuttunen, Kyoesti; Vuorinen, Tapani
CORPORATE SOURCE: Laboratory of Forest Products Chemistry,

Helsinki University of Technology, Espoo, FIN-02015, Finland

SOURCE: Carbohydrate Polymers (2004), 58(4), 443-448
CODEN: CAPOD8; ISSN: 0144-8617
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Keggin type **polyoxometalates** (POMs) are proposed as agents for improving the feasibility of oxygen bleaching technique used in producing cellulose fiber in the wood pulping industry. To study the possible interactions between carbohydrate polymers and POMs, several different POM anions were eluted through a column containing dextran chromatog. gel (Sephadex G-50). Solns. of KCl (0.05 and 0.10 mol/L) and NaCl (0.10 mol/L) were used as the eluents. The elution vols. (Ve) of all the POMs tested are greater than the Ve of the internal standard, glycine. The Ve of the POMs increased along with increasing electrolyte concentration When eluted with 0.10 mol/L KCl solution, the Ve were greater than the resp. values of the same POMs eluted with 0.10 mol/L NaCl solution These facts suggest that POM and the Sephadex gel form complexes, and that the tendency for this to take place depends on the type and concentration of cations present in the system. The method described in this paper may be useful in analyzing and **purifying mixts.** of POMs.

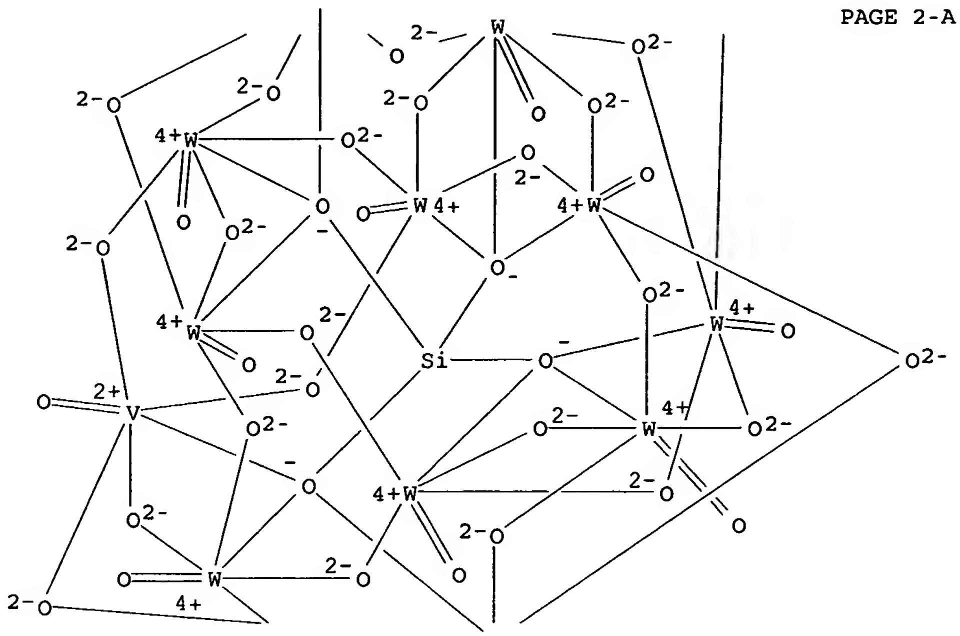
IT **93279-93-7 137531-01-2**
RL: ANT (Analyte); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(separation of **polyoxometalates** by gel filtration using Sephadex G50 column)

RN 93279-93-7 HCAPLUS

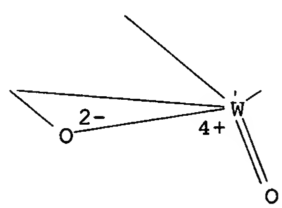
CN Vanadate(6-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetra-μ-oxooxo-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



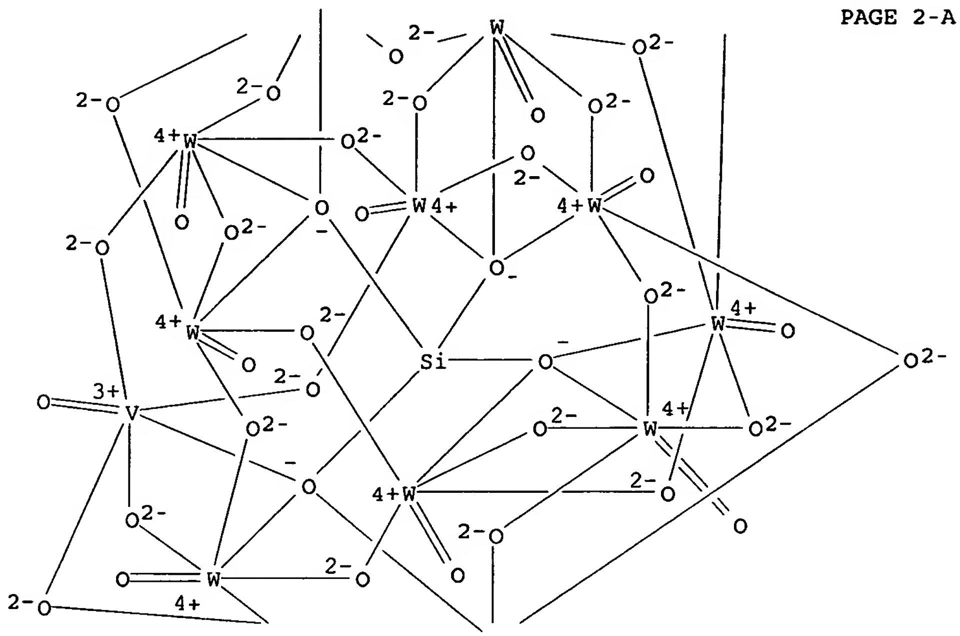
PAGE 3-A



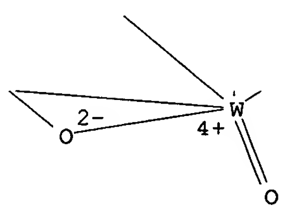
●6 K^+

RN 137531-01-2 HCAPLUS
CN Vanadate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetra-μ-oxooxo-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



PAGE 2-A



PAGE 3-A

● 5 K^+

CC 43-6 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 79

ST Keggin **polyoxometalate** sepn gel filtration Sephadex G50 column; pulp bleaching agent **polyoxometalate** sepn gel filtration

IT Pulp bleaching
(oxygen; separation of **polyoxometalates** by gel filtration using Sephadex G50 column)

IT Size-exclusion chromatography
(separation of **polyoxometalates** by gel filtration using Sephadex G50 column)

IT Heteropoly acids
RL: ANT (Analyte); ANST (Analytical study)
(tungstates; separation of **polyoxometalates** by gel filtration using Sephadex G50 column)

IT **93279-93-7** **137531-01-2** 172304-20-0
394212-03-4 680592-64-7 864384-24-7
RL: ANT (Analyte); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(separation of **polyoxometalates** by gel filtration using Sephadex G50 column)

IT 9048-71-9, Sephadex G 50
RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified); ANST (Analytical study); USES (Uses)
(separation of **polyoxometalates** by gel filtration using Sephadex G50 column)

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 12 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:999712 HCAPLUS
DOCUMENT NUMBER: 141:427184
TITLE: **Compositions**, materials incorporating the **compositions**, and methods of using the **compositions** and materials
INVENTOR(S): **Okun, Nelya; Hill, Craig L.**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004230086	A1	20041118	US 2004-786671	20040225
WO 2005021435	A2	20050310	WO 2004-US5645	20040225

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-449892P P 20030225
US 2004-786671 A 20040225

AB **Compns.** that can protect and/or remove **contaminants** such as **warfare** agents from the environment in which people are operating are disclosed, as are materials incorporating the **compns.**, and methods of use thereof. In one embodiment, the **composition** includes a metal nitrate selected from d-block metal nitrates and f-block metal nitrates and a metal salt having weakly bound counter anions. The metal of the metal salt having weakly bound counter anions is selected from a d-block metal and an f-block metal. Another embodiment of the **composition** includes a first **polyoxometalate** having a first metal selected from a d-block metal and an f-block metal and a second

polyoxometalate having a second metal selected from a
d-block metal and an f-block metal, the first metal being an open
coordinate site of the first **polyoxometalate.** In addition,
the first metal has a nitrate terminal ligand.

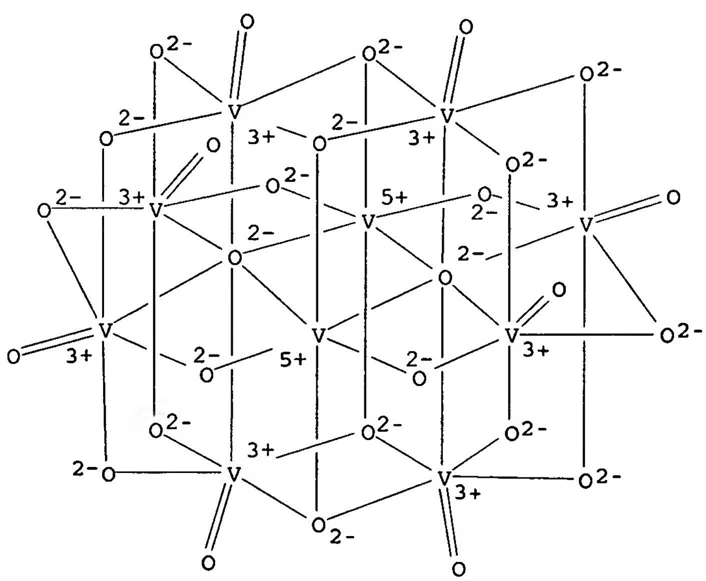
IT **59858-44-5 134360-58-0 795308-36-0**
796042-78-9
RL: CAT (Catalyst use); USES (Uses)
(as **polyoxometalate**; catalytic **compns.** for
removal of **contaminants** such as **warfare**
agents, and materials incorporating these **compns.**)

RN 59858-44-5 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, tetradeca-μ-oxo-tetra-μ3-oxodi-μ6-oxooctaoxodecavanadate(6-) (6:1) (9CI) (CA INDEX NAME)

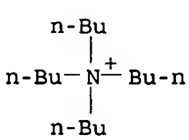
CM 1

CRN 12397-12-5
CMF O28 V10
CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N



RN 134360-58-0 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'

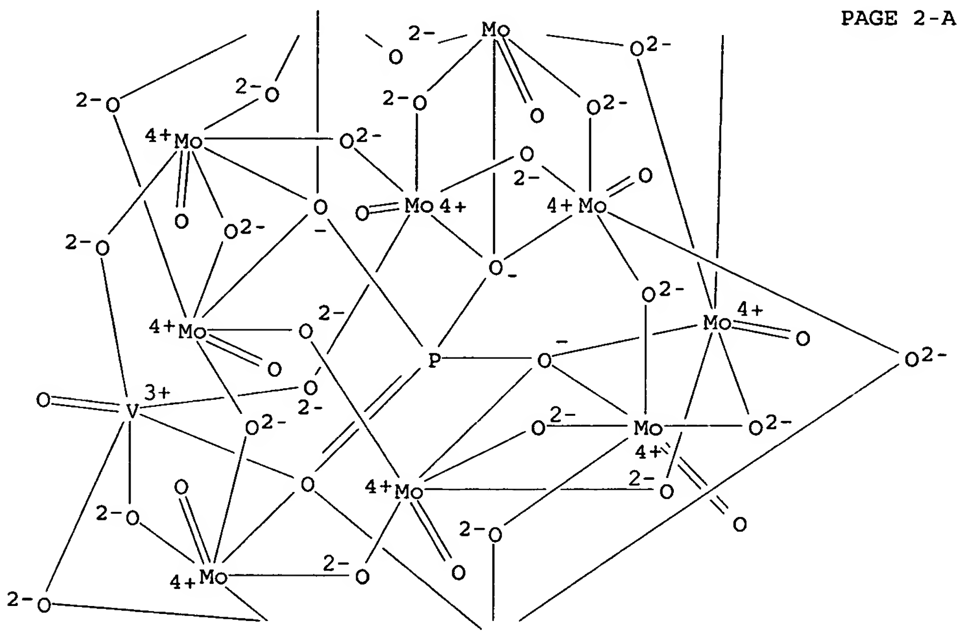
':κO'':κO'':κO''':κO''':κO''']]divan
adate(5-) (5:1) (9CI) (CA INDEX NAME)

CM 1

CRN 58071-93-5
CMF Mo10 O40 P V2
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

PAGE 2-A



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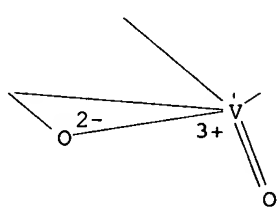
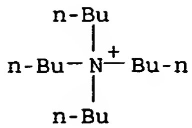


CM 2

CRN 10549-76-5
CMF C16 H36 N



RN 795308-36-0 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, heneicosa-μ-oxononaoxo[μ12-
[phosphato(3-)-κO:κO:κO:κO':κO':.kap
pa.O':κO'':κO'':κO'':κO''':κO''':.ka
ppa.O''']](tri-μ-oxotriferrate)nonatungstate(6-) (6:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 741643-46-9
CMF Fe3 O37 P W9
CCI CCS

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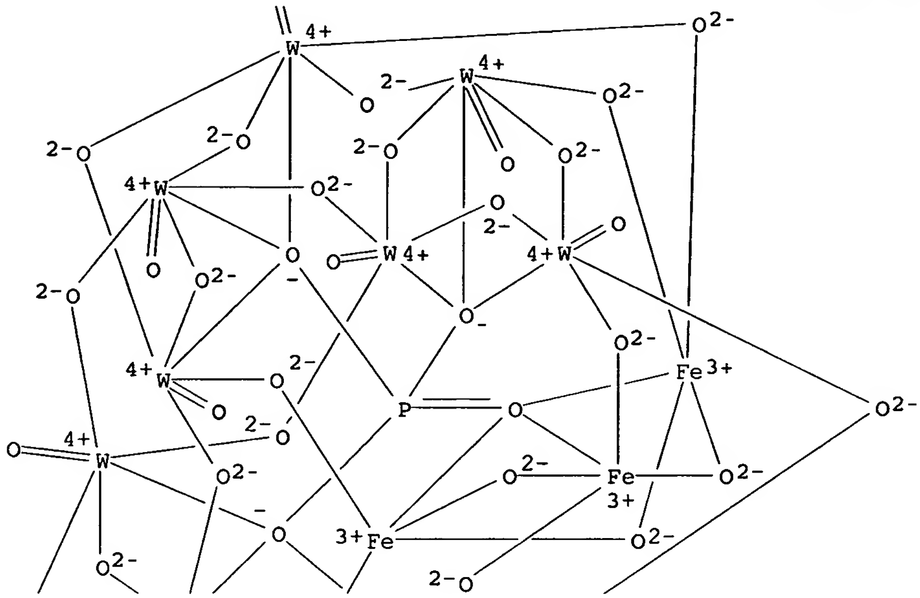

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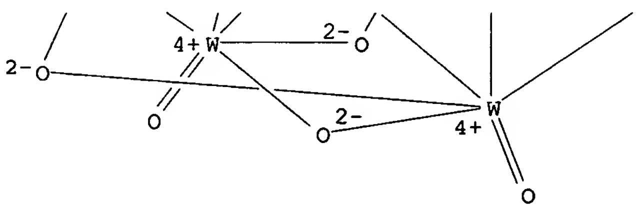
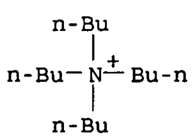


CM 2

CRN 10549-76-5
CMF C16 H36 N



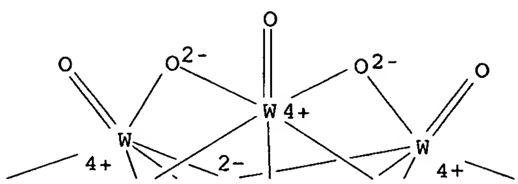
RN 796042-78-9 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, triferratedotetraconta-μ-oxooctadecaoxobis[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]octadecatungstate(9-) (9:1) (9CI) (CA INDEX NAME)

CM 1

CRN 796042-77-8
CMF Fe3 O68 P2 W18

CCI CCS

PAGE 1-A



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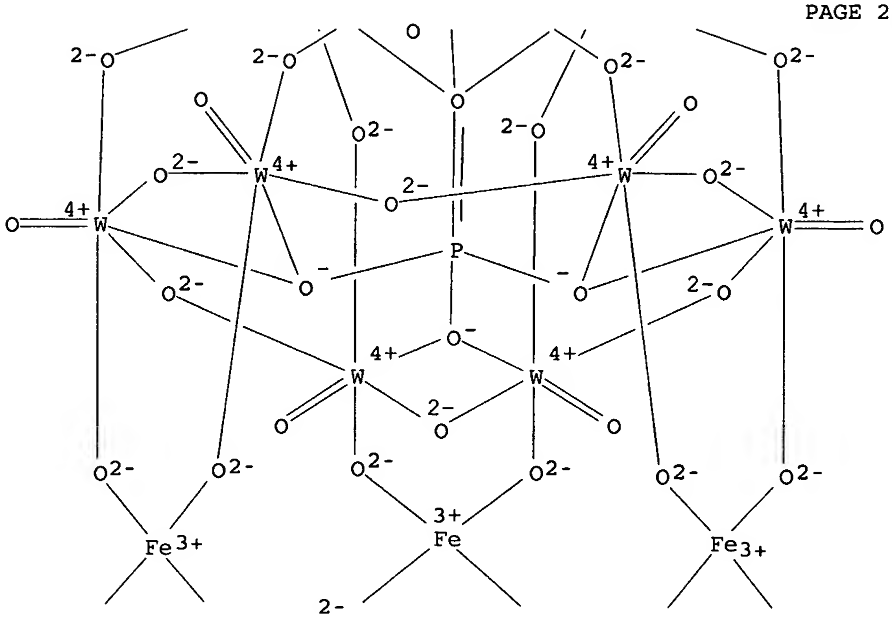

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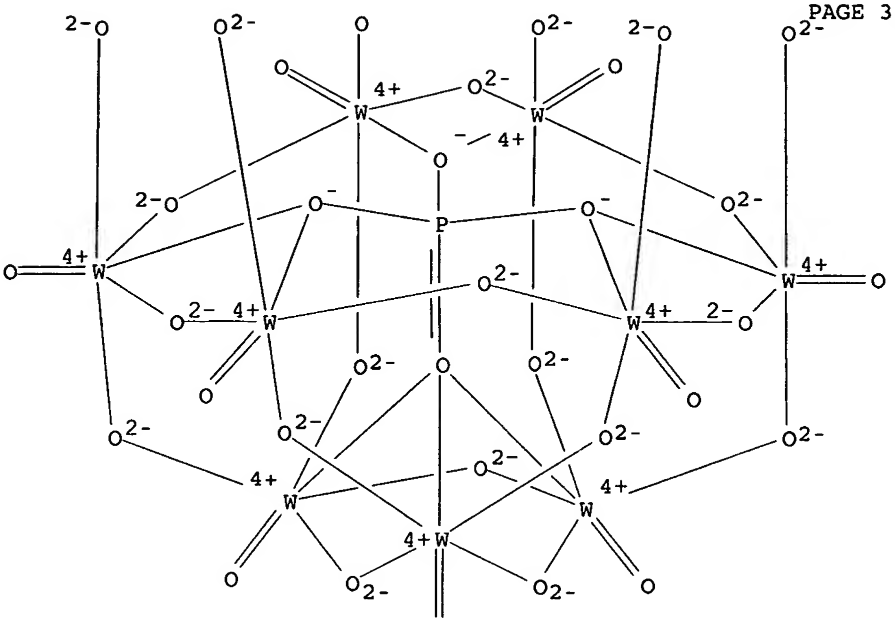

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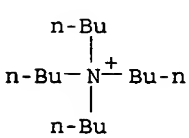
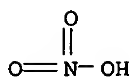
O

CM 2

CRN 10549-76-5
CMF C16 H36 N

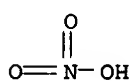


IT **3251-23-8**, Copper (II) nitrate **10108-73-3**, Cerium (III) nitrate **10141-05-6**, Cobalt (II) nitrate **10421-48-4**, Iron (III) nitrate **13093-17-9** **13138-45-9**, Nickel (II) nitrate **13770-18-8**, Copper (II) perchlorate **34946-82-2**, Copper (II) trifluoromethanesulfonate **38465-60-0**, Copper (II) tetrafluoroborate
RL: CAT (Catalyst use); USES (Uses)
(catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)
RN 3251-23-8 HCAPLUS
CN Nitric acid, copper(2+) salt (8CI, 9CI) (CA INDEX NAME)



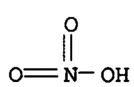
●1/2 Cu(II)

RN 10108-73-3 HCAPLUS
CN Nitric acid, cerium(3+) salt (8CI, 9CI) (CA INDEX NAME)



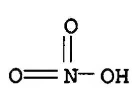
●1/3 Ce(III)

RN 10141-05-6 HCAPLUS
CN Nitric acid, cobalt(2+) salt (8CI, 9CI) (CA INDEX NAME)



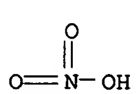
●1/2 Co(II)

RN 10421-48-4 HCAPLUS
CN Nitric acid, iron(3+) salt (8CI, 9CI) (CA INDEX NAME)



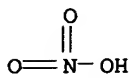
●1/3 Fe(III)

RN 13093-17-9 HCAPLUS
CN Nitric acid, cerium(4+) salt (8CI, 9CI) (CA INDEX NAME)



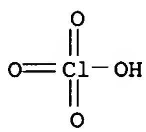
●1/4 Ce(IV)

RN 13138-45-9 HCAPLUS
CN Nitric acid, nickel(2+) salt (8CI, 9CI) (CA INDEX NAME)



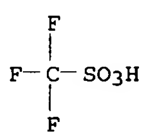
●1/2 Ni(II)

RN 13770-18-8 HCAPLUS
CN Perchloric acid, copper(2+) salt (8CI, 9CI) (CA INDEX NAME)



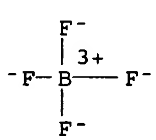
●1/2 Cu(II)

RN 34946-82-2 HCAPLUS
CN Methanesulfonic acid, trifluoro-, copper(2+) salt (9CI) (CA INDEX NAME)



●1/2 Cu(II)

RN 38465-60-0 HCAPLUS
CN Borate(1-), tetrafluoro-, copper(2+) (2:1) (9CI) (CA INDEX NAME)



●1/2 Cu(II) 2+

IC ICM A62D003-00
ICS C11D001-00
INCL 588205000
CC 59-2 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): **4**
ST polyoxymetalate nitrate copper catalytic oxidn **warfare** agent
IT Biological **warfare** agents
Chemical **warfare** agents
Coating materials

Environmental **pollution** control
Oxidation catalysts
Powders
Textiles
(catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT Aldehydes, processes
RL: ADV (Adverse effect, including toxicity); CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT Oxidation
(catalytic; catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT Drug delivery systems
(topical; catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT Heteropoly acids
RL: CAT (Catalyst use); USES (Uses)
(tungstates, complexes with iron, silver, and/or cerium; catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT 7727-37-9D, Nitrogen, compds.
RL: ADV (Adverse effect, including toxicity); CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(aliphatic; catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT 7440-33-7D, Tungsten, heteropoly compds. containing, complexes with iron **59858-44-5 134360-58-0 795308-36-0 796042-78-9**
RL: CAT (Catalyst use); USES (Uses)
(as **polyoxometalate**; catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT 50-00-0, Formaldehyde, processes 57-12-5D, Cyanide, compds. 74-93-1, Methyl mercaptan, processes 75-07-0, Acetaldehyde, processes 75-18-3, Dimethyl sulfide 75-44-5, Phosgene 75-50-3, Trimethylamine, processes 79-09-4, Propionic acid, processes 100-42-5, Styrene, processes 107-92-6, Butyric acid, processes 109-52-4, Valeric acid, processes 110-81-6, Diethyl disulfide 110-86-1, Pyridine, processes 352-93-2, Diethyl sulfide 503-74-2, Iso-valeric acid 505-60-2, Mustard gas 624-92-0 630-08-0, Carbon monoxide, processes 693-07-2, 2-Chloroethyl ethyl sulfide 7440-38-2D, Arsenic, compds. 7664-41-7, Ammonia, processes 7704-34-9D, Sulfur, compds. 7783-06-4, Hydrogen sulfide, processes
RL: ADV (Adverse effect, including toxicity); CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

IT **3251-23-8**, Copper (II) nitrate 7439-89-6D, Iron, complexes with heteropolytungstates 7440-22-4D, Silver, complexes with heteropolytungstates 7440-45-1D, Cerium,

complexes with heteropolytungstates **10108-73-3**, Cerium (III) nitrate **10141-05-6**, Cobalt (II) nitrate **10421-48-4**, Iron (III) nitrate **13093-17-9** **13138-45-9**, Nickel (II) nitrate **13770-18-8**, Copper (II) perchlorate **34946-82-2**, Copper (II) trifluoromethanesulfonate **38465-60-0**, Copper (II) tetrafluoroborate
RL: CAT (Catalyst use); USES (Uses)
(catalytic **compns.** for removal of **contaminants** such as **warfare** agents, and materials incorporating these **compns.**)

L114 ANSWER 13 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:769381 HCAPLUS
DOCUMENT NUMBER: 142:227445
TITLE: Tuning the formal potentials of new VIV-substituted Dawson-type **polyoxometalates** for facile synthesis of metal nanoparticles
AUTHOR(S): Keita, Bineta; Mbomekalle, Israel-Martyr; Nadjo, Louis; Haut, Christian
CORPORATE SOURCE: CNRS, Electrochimie et Photoelectrochimie, Laboratoire de Chimie Physique, UMR 8000, Universite Paris-Sud, Orsay, 91405, Fr.
SOURCE: Electrochemistry Communications (2004), 6(10), 978-983
CODEN: ECCMF9; ISSN: 1388-2481
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

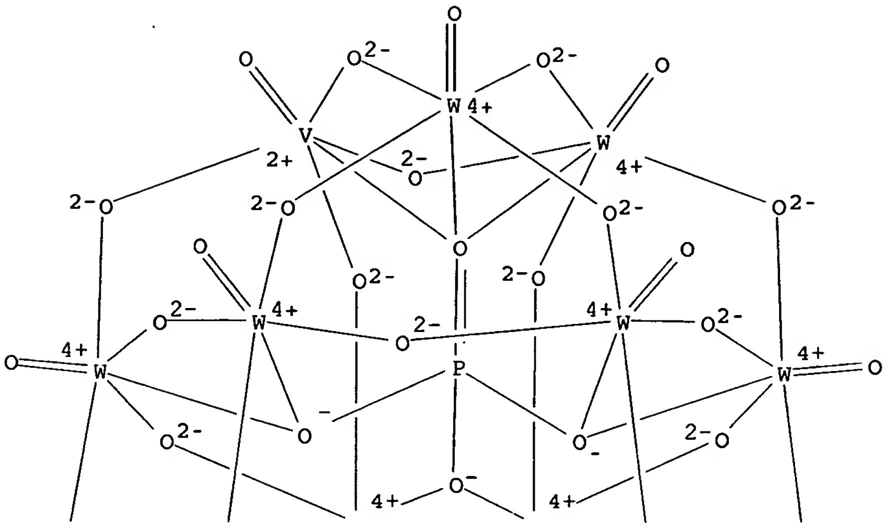
AB Dawson-type V-substituted POMs were synthesized and characterized both in their oxidized VV and reduced VIV states. They were stable in the presence of dioxygen. The apparent formal potentials of the V-centers within these mols. can be manipulated to span an appreciable potential range through variation of the overall atomic **composition** of the POMs and/or localization of the substituent V-atom in the framework. For each mol., this formal potential is pH-independent for pH values larger than 2.5. The stability of both forms of these mols. over a large pH domain was **exploited** for the synthesis of metal nanoparticles, because this class of POMs presents several interesting features not available usually with other chemical reductants. The preparation of Pd0 nanoparticles from [PdCl4]2- was selected as an illustrative example. UV-Vis spectroscopy and TEM micrograph were used to confirm this successful synthesis.

IT **12412-90-7P 85585-35-9P 161338-89-2P** **202462-99-5P 258869-02-2P 841244-79-9P** **841244-91-5P 841244-95-9P**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(tuning formal potentials of new VIV-substituted Dawson-type **polyoxometalates** for facile synthesis of metal nanoparticles)

RN 12412-90-7 HCAPLUS

CN Vanadate(8-), [dotriaconta-μ-oxoheptadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':.kappa.O'':κO''':κO''']]heptadecatungstate]tetra-μ-oxooxo[μ9-[phosphato(3-)-κO:κO:κO:κO':.kappa.O':κO'':κO'':κO''':κO''']]- (9CI) (CA INDEX NAME)

PAGE 1-A



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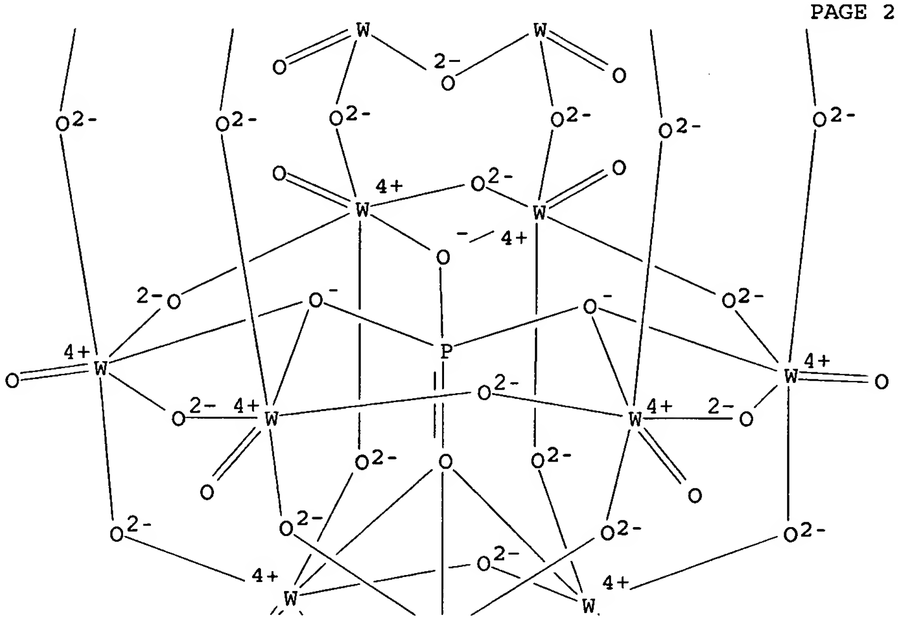

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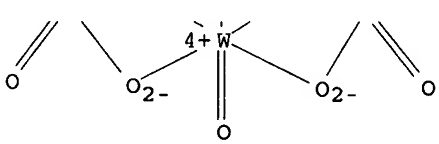

RN 85585-35-9 HCAPLUS
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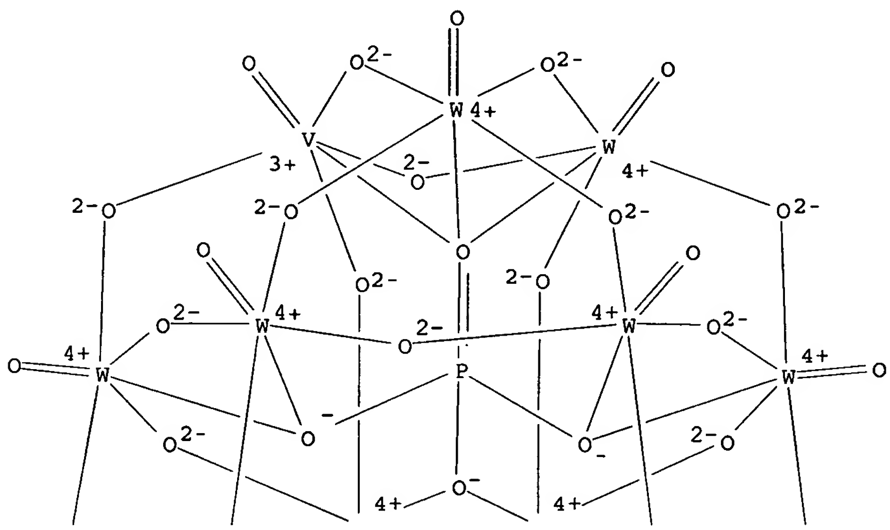
(CA INDEX NAME)

PAGE 1-A



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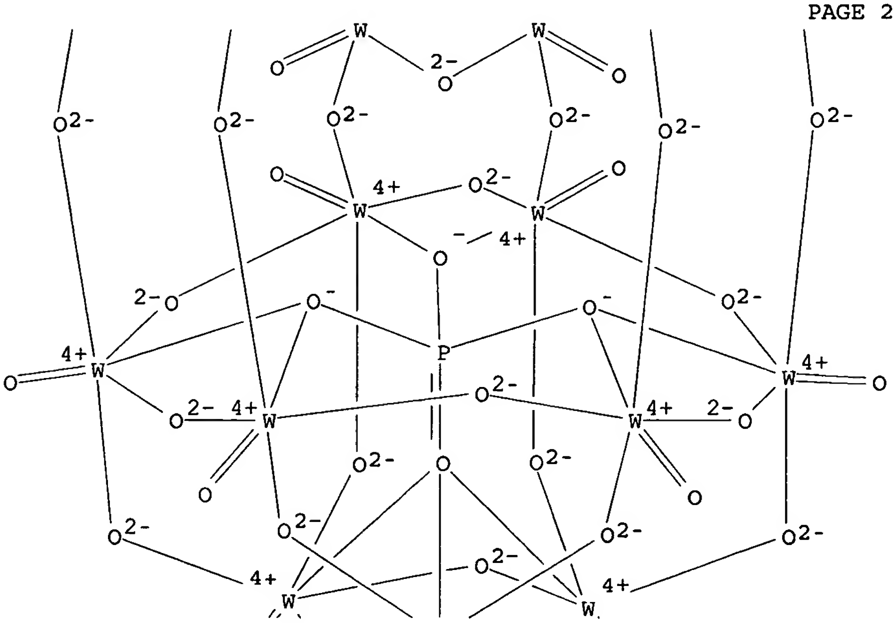

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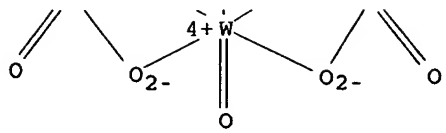

RN 161338-89-2 HCAPLUS
CN Vanadate(7-), [dotriaconta-μ-oxoheptadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':.kappa.O'':κO''':κO''']]heptadecatungstate]tetra-μ-oxooxo[μ9-[phosphato(3-)-κO:κO:κO:κO':.kappa.O':κO'':κO'':κO''':κO''']]- (9CI) (CA INDEX NAME)

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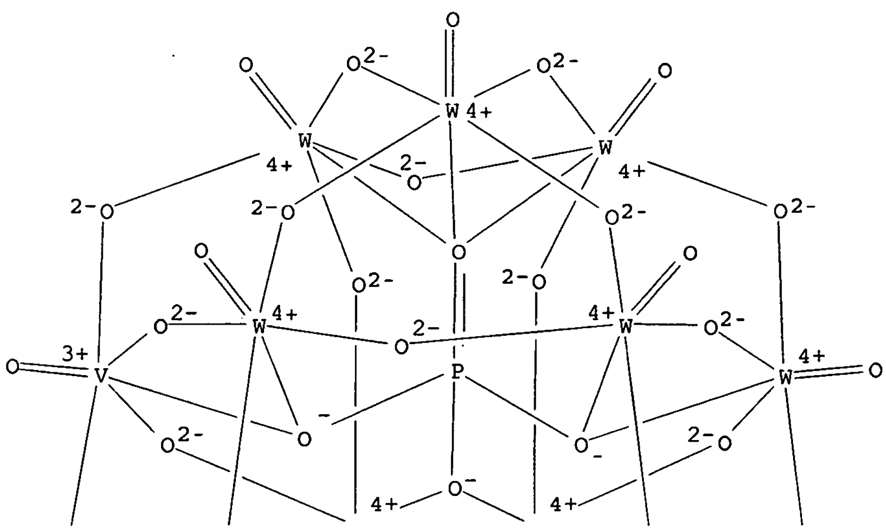

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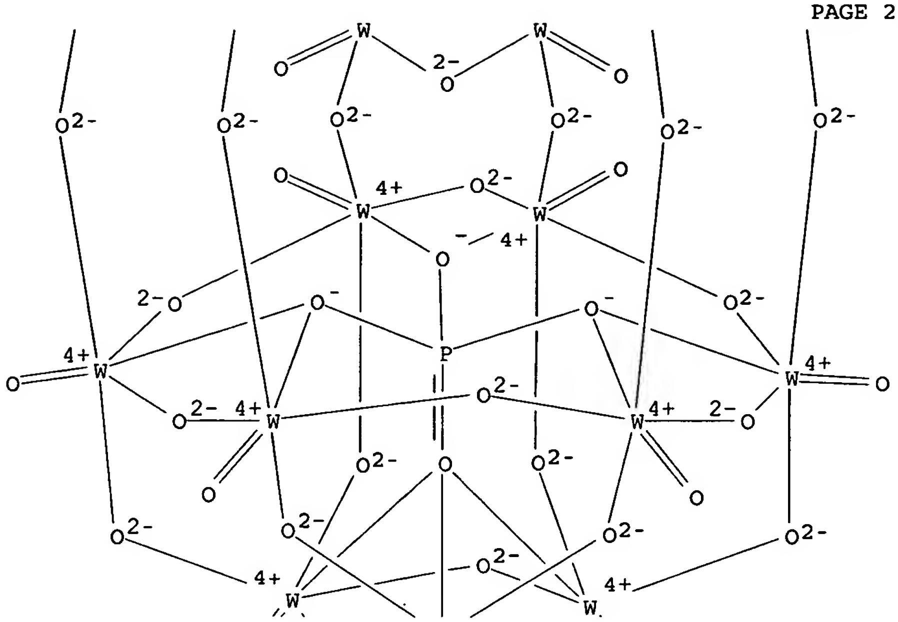

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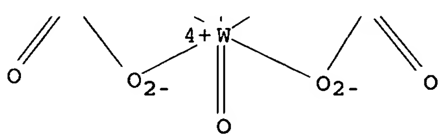

RN 202462-99-5 HCAPLUS
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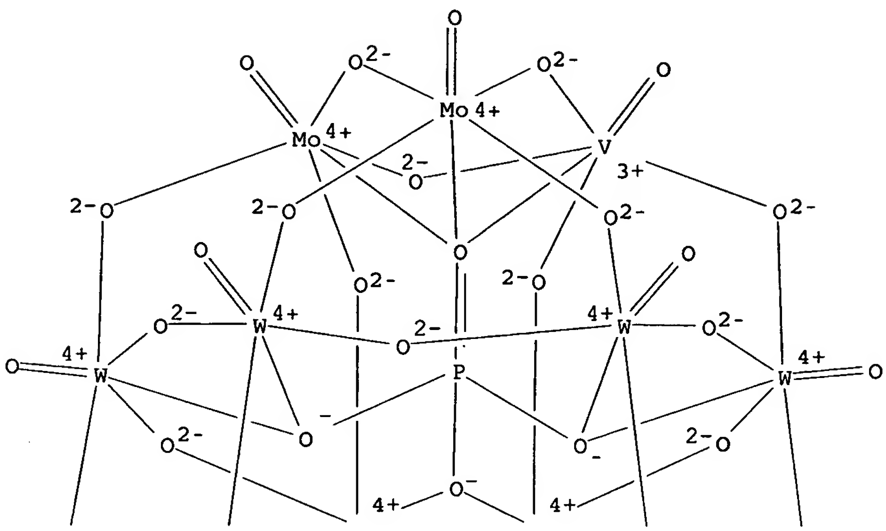

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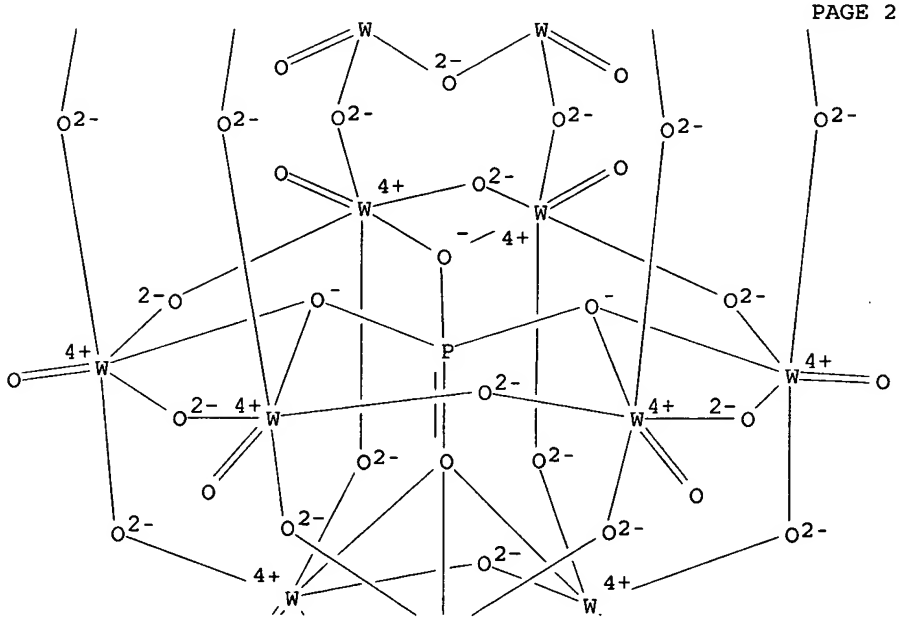

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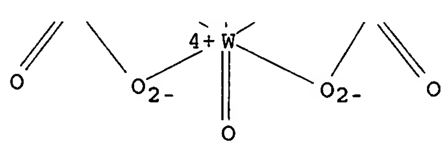

RN 258869-02-2 HCAPLUS
CN Vanadate(8-), [heptacosa-μ-oxopentadecaoxo[μ9-[phosphato(3-)-
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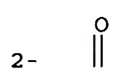

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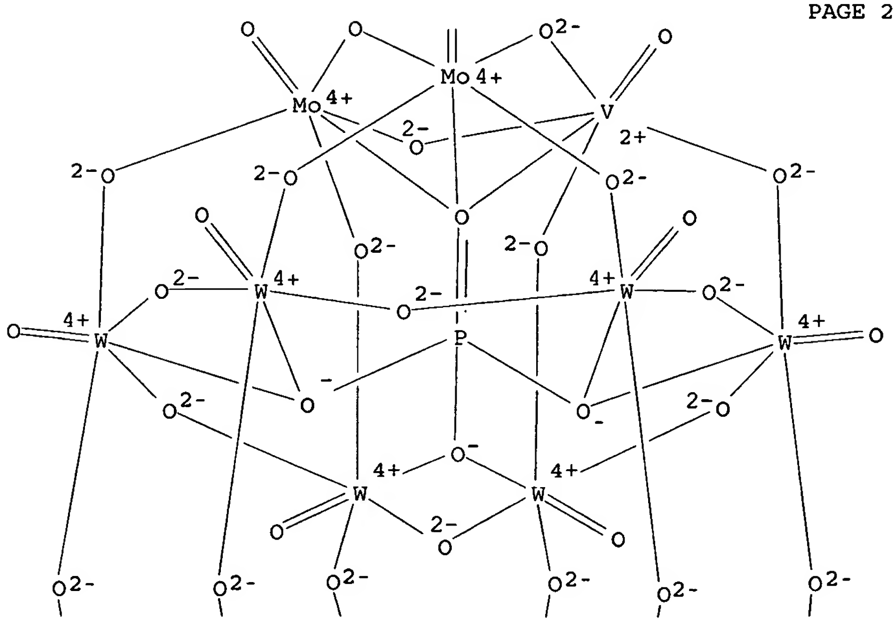

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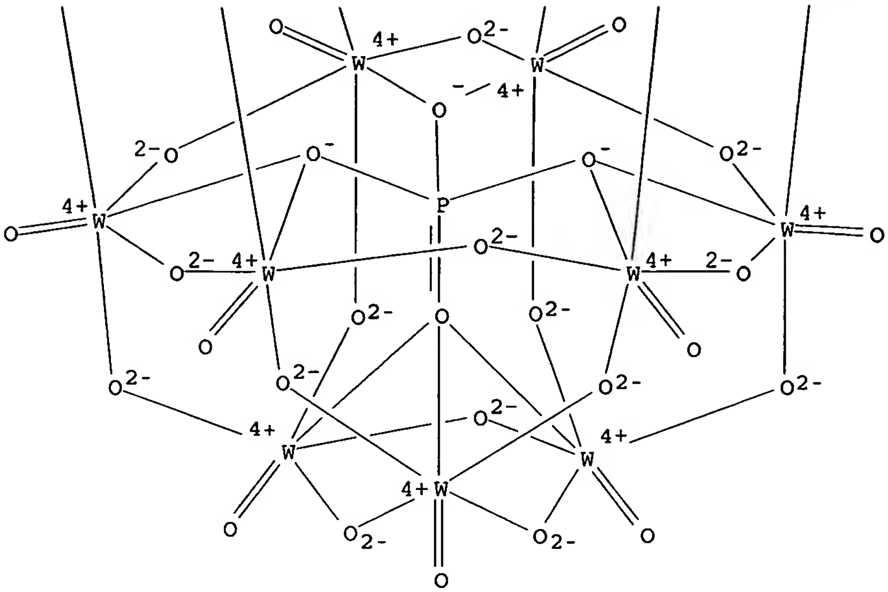

RN 841244-79-9 HCAPLUS
CN Vanadate(9-), tetra-μ-oxooxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']](tri-μ-hydroxy-μ3-hydroxydotriaconta-μ-oxoheptadecaoxoheptadecatungstate)- (9CI) (CA INDEX NAME)

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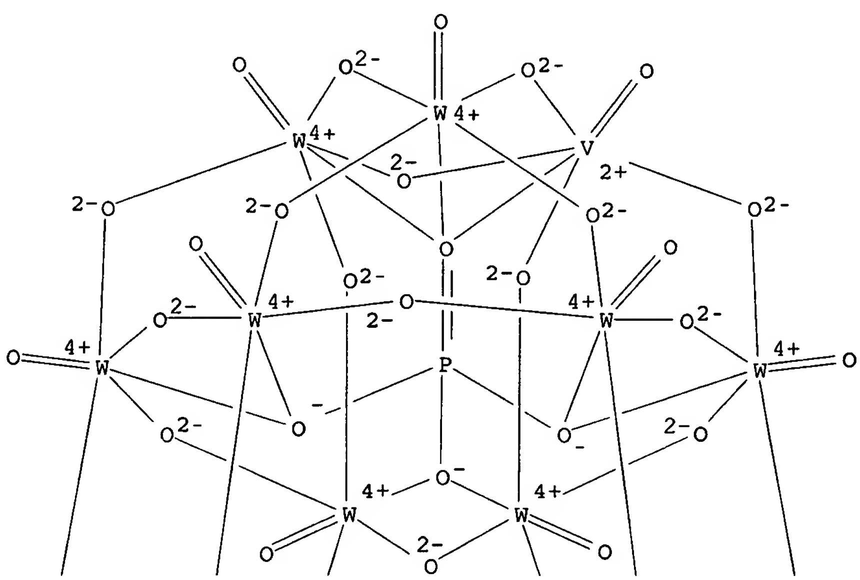

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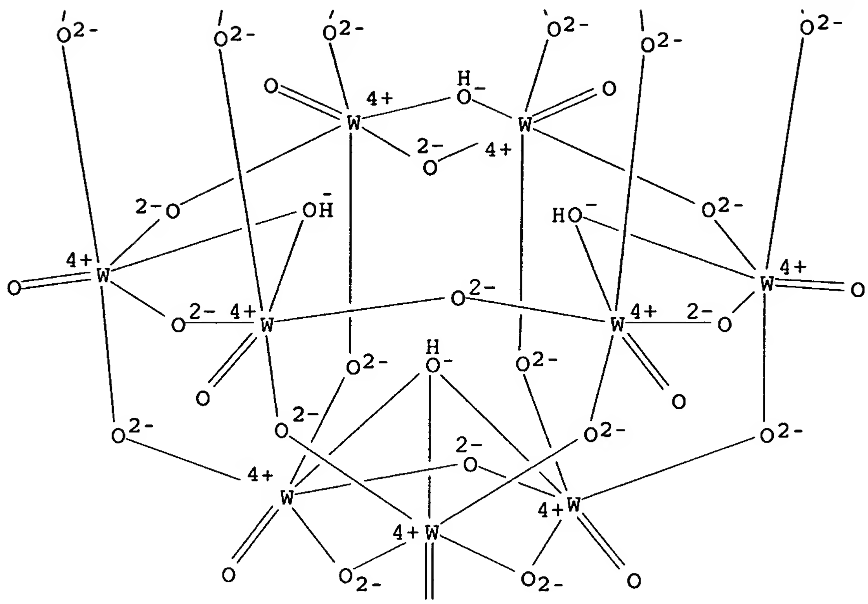

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RN 841244-91-5 HCAPLUS

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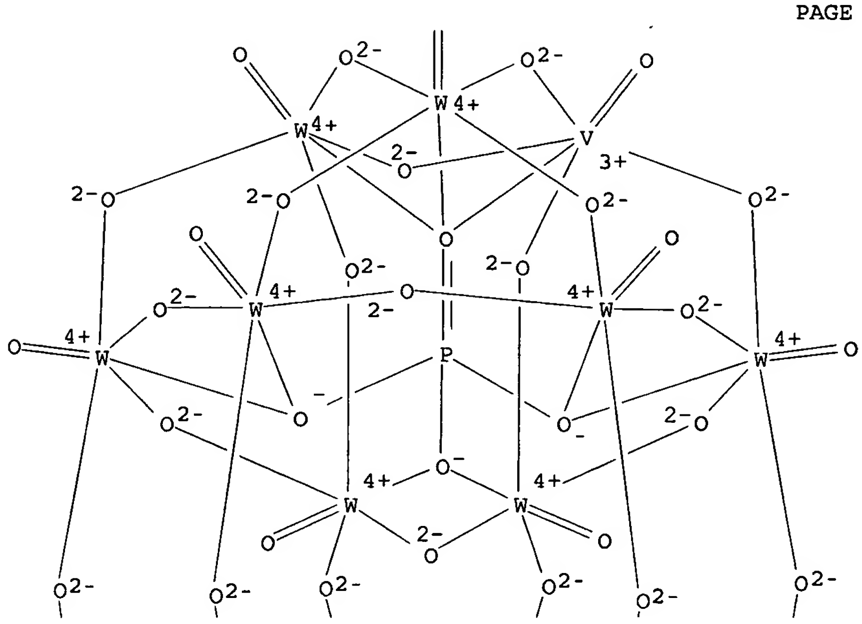

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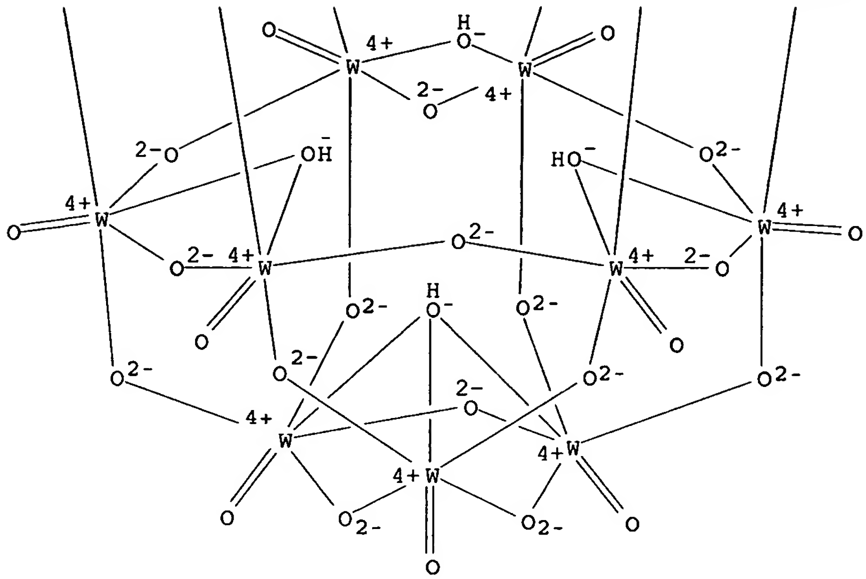

RN 841244-95-9 HCAPLUS
CN Vanadate(8-), [dotriaconta-μ-oxoheptadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':.kappa.O'':κO''':κO''']]heptadecatungstate]tetra-μ-oxooxo[μ9-[phosphato(3-)-κO:κO:κO:κO':.kappa.O':κO'':κO'':κO''':κO''']]- (9CI)
(CA INDEX NAME)

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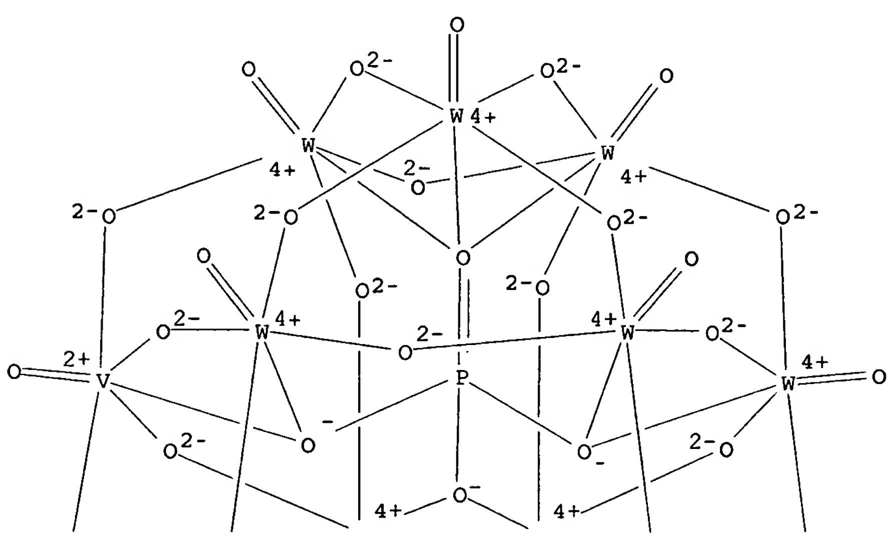

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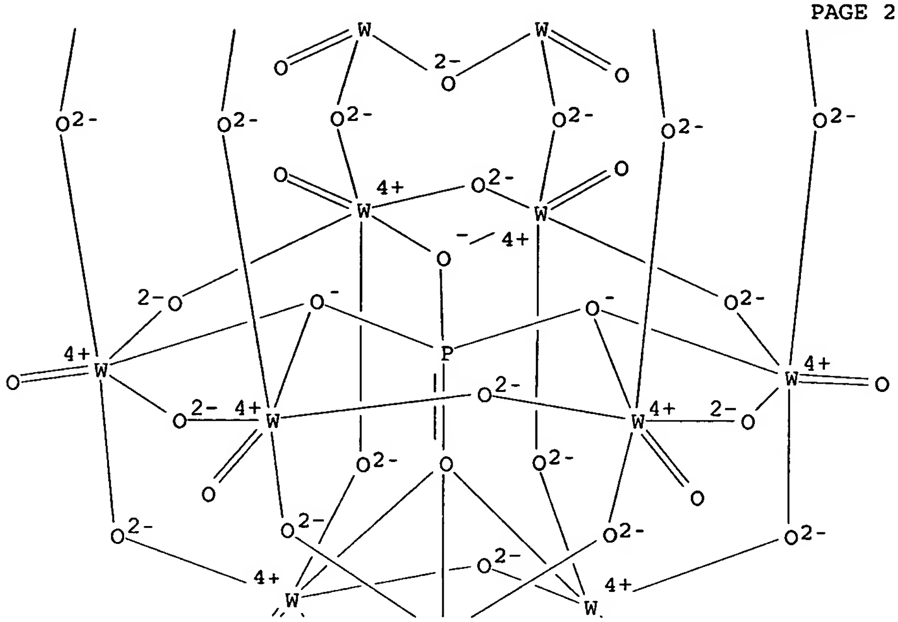

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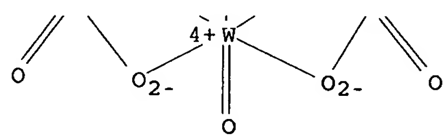


CC 72-2 (Electrochemistry)
Section cross-reference(s): 73, 78

ST Dowson type **polyoxometalate** vanadium substituted formal potential nanoparticle palladium

IT Heteropoly acids
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(Dawson-type; tuning formal potentials of new VIV-substituted Dawson-type **polyoxometalates** for facile synthesis of metal nanoparticles)

IT Surface structure
(TEM imaging; of palladium nanoparticles formed on vanadium-substituted Dawson-type **polyoxometalates** with glassy carbon electrode in neutral solns.)

IT Redox reaction
(electrochem.; of new VIV-substituted Dawson-type **polyoxometalates**)

IT Oxidation potential
UV and visible spectra
(of vanadium-substituted Dawson-type **polyoxometalates** on glassy carbon electrode in neutral solns.)

IT Cyclic voltammetry
(of vanadium-substituted Dawson-type **polyoxometalates** with glassy carbon electrode in neutral solns.)

IT Formal potential
Nanoparticles

(tuning formal potentials of new VIV-substituted Dawson-type **polyoxometalates** for facile synthesis of metal nanoparticles)

IT 7440-44-0, Glassy carbon, uses
RL: DEV (Device component use); USES (Uses)
(glassy; cyclic voltammetry of vanadium-substituted Dawson-type **polyoxometalates** with glassy carbon electrode in neutral solns.)

IT 7440-05-3P, Palladium, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)
(tuning formal potentials of new VIV-substituted Dawson-type **polyoxometalates** for facile synthesis of metal nanoparticles)

IT **12412-90-7P** **85585-35-9P** 139902-56-0P
161338-89-2P **202462-99-5P** **258869-02-2P**
841244-63-1P 841244-66-4P 841244-72-2P **841244-79-9P**
841244-82-4P 841244-85-7P 841244-88-0P **841244-91-5P**
841244-95-9P 841245-02-1P
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(tuning formal potentials of new VIV-substituted Dawson-type **polyoxometalates** for facile synthesis of metal nanoparticles)

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 14 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:690229 HCAPLUS
DOCUMENT NUMBER: 141:357912
TITLE: Preparation of surface modifications of mesoporous titania with monosubstituted Keggin units and their catalytic performance for organochlorine pesticide and dyes under UV irradiation
AUTHOR(S): Yang, Yu; Guo, Yihang; Hu, Changwen; Wang, Yuanhong; Wang, Enbo
CORPORATE SOURCE: Institute of Polyoxometalate Chemistry, Faculty of Chemistry, Northeast Normal University, Changchun, 130024, Peop. Rep. China
SOURCE: Applied Catalysis, A: General (2004), 273(1-2), 201-210
CODEN: ACAGE4; ISSN: 0926-860X
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A kind of novel and efficient catalyst, mesoporous TiO2 (anatase) modified by two transition metal-monosubstituted **polyoxometalates** (POMs), i.e., K5[Ni(H2O)PW11O39] (PW11Ni) and K5[Co(H2O)PW11O39] (PW11Co), was used to photodegrade an organochlorine pesticide, hexachlorobenzene (HCB), and three kinds of different dyes under UV irradiation These dyes have various chemical structures, either azoic (Congo red (CR), Methyl orange (MO)), or anthraquinonic (Alizarin S (AS)) or fluorescent (Neutral red (NR)). Anatase TiO2 was prepared by combined sol-gel and programmed temperature hydrothermal methods at a lower temperature (200° C), and these as-synthesized TiO2 particles were further functionalized by 3-aminopropyltriethoxysilane (APS). Amine-functionalized TiO2 materials **impregnated** with monosubstituted **polyoxometalates** were prepared by coordination of Ni or Co in the units of **polyoxometalates** with surface amine

groups in TiO2. The resulting materials have been characterized by several methods, including UV diffuse reflectance spectroscopy (UV/DRS), x-ray diffraction (XRD), inductively coupled plasma atomic emission spectrometry (ICP-AES), 31P magic-angle spinning NMR (MAS NMR), transmission electron microscopy (TEM), and nitrogen adsorption. The conversions of organochlorine pesticide (HCB) and dyes (CR, MO, AS and NR) remarkably increased on UV-irradiating these as-prepared catalysts compared with the results over traditional anatase TiO2; in particular, HCB conversion reached above 98% after UV-irradiating the catalysts for 60 min. With good photocatalytic activity under UV irradiation and the ability to be readily separated from the reaction system, this novel kind of catalyst exhibited the potential to be effective in the treatment of organic **pollutants** in aqueous systems.

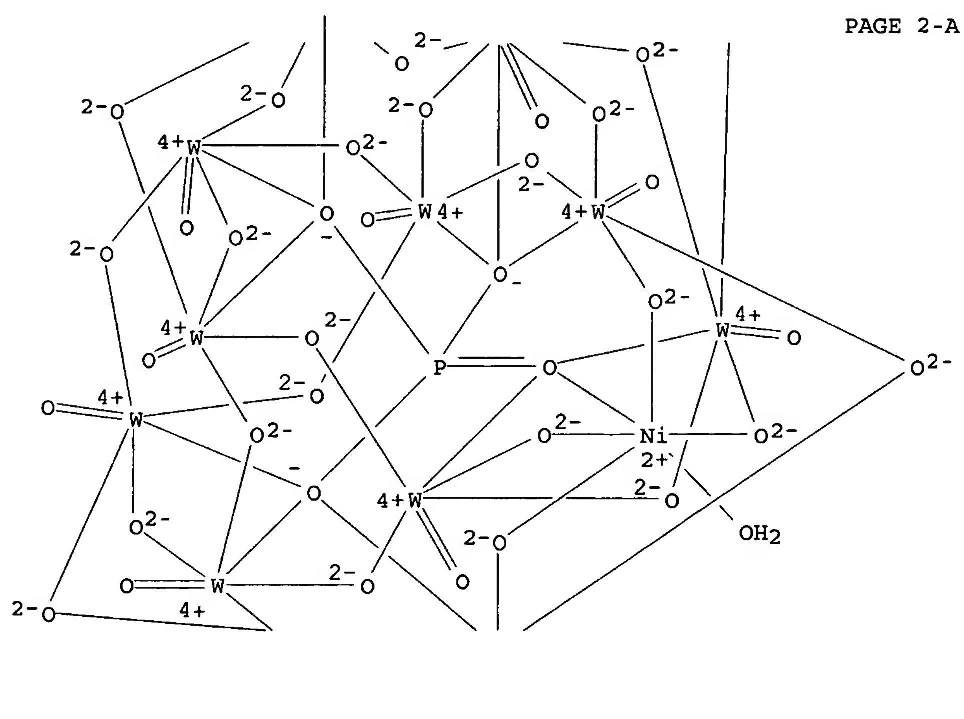
IT **37194-75-5DP**, surface reaction product with amine-functionalized titania **39293-41-9DP**, surface reaction product with amine-functionalized titania
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)

RN 37194-75-5 HCAPLUS

CN Tungstate(5-), (aquanickelate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kap pa.O'κO'':κO'':κO'':κO''':κO''':.kap pa.O''']]undeca-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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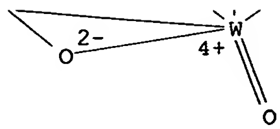

●5 K^+

RN 39293-41-9 HCAPLUS

CN Tungstate(5-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kappa.O':κO'':κO'':κO'':κO''':κO''':.kappa.O''']]undeca-, pentapotassium (9CI) (CA INDEX NAME)

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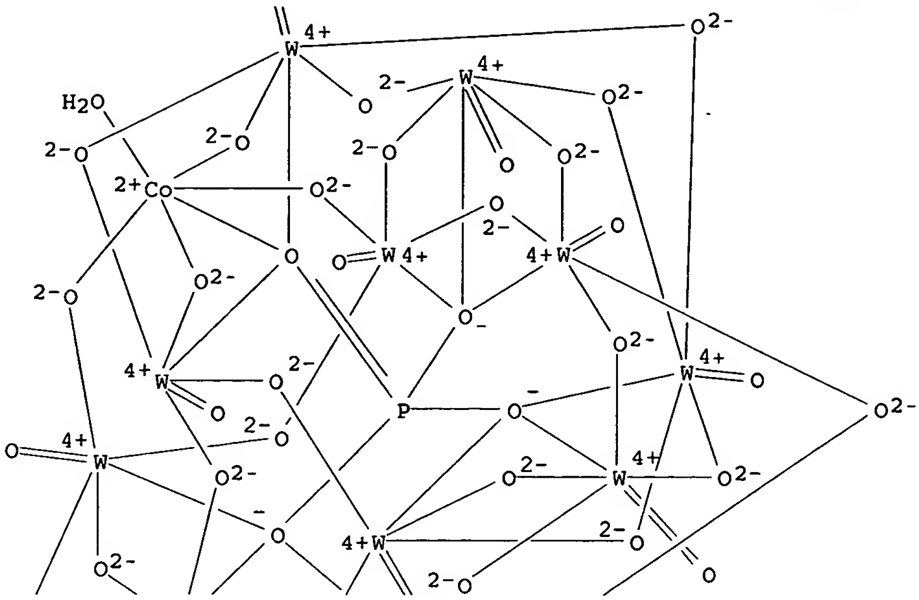

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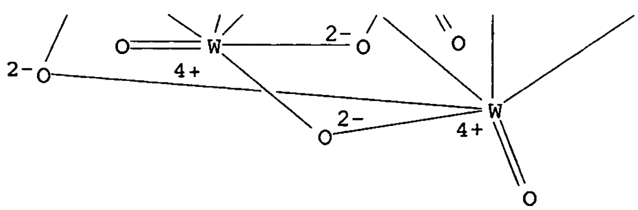


●5 K^+

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 60, 67

ST **polyoxometalate** surface modification mesoporous titania
photocatalyst; organochlorine pesticide water **pollutant**
dye photodegrdn catalyst

IT Reflection spectra
(UV-visible diffuse; sol-gel preparation and properties of
mesoporous TiO2 modified by transition metal-substituted
polyoxometalates and its activity as photocatalyst for
degradation of aqueous hexachlorobenzene and dyes)

IT UV and visible spectra
(diffuse reflection; sol-gel preparation and properties of
mesoporous TiO2 modified by transition metal-substituted
polyoxometalates and its activity as photocatalyst for
degradation of aqueous hexachlorobenzene and dyes)

IT Porous materials
(films, mesoporous; sol-gel preparation and properties of mesoporous
TiO2 modified by transition metal-substituted
polyoxometalates and its activity as photocatalyst for
degradation of aqueous hexachlorobenzene and dyes)

IT Wastewater treatment
(photocatalytic; photocatalyst activity of sol-gel derived mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** for degradation of aqueous organochlorine pesticide and dyes in relation to)
IT Catalysis
(photochem.; sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)
IT Films
(porous, mesoporous; sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)
IT Photolysis catalysts
Pore size distribution
Sol-gel processing
X-ray diffraction
(sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)
IT Heteropoly acids
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(transition metal tungstophosphates; sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)
IT 13463-67-7DP, Titania, amino-functionalized, surface product with transition metal-substituted **polyoxometalates**
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(anatase-type; sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)
IT 118-74-1, Hexachlorobenzene 130-22-3, Alizarin S 547-58-0, Methyl orange 553-24-2, Neutral red 573-58-0, Congo red
RL: RCT (Reactant); RACT (Reactant or reagent)
(model reaction; photocatalyst activity of sol-gel derived mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** for degradation of aqueous organochlorine pesticide and dyes)
IT 919-30-2DP, 3-Aminopropyltriethoxysilane, surface product with titania and **polyoxometalates 37194-75-5DP**, surface reaction product with amine-functionalized titania **39293-41-9DP**, surface reaction product with amine-functionalized titania
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)
IT 546-68-9, Titanium tetraisopropoxide
RL: RCT (Reactant); RACT (Reactant or reagent)
(sol-gel preparation and properties of mesoporous TiO2 modified by transition metal-substituted **polyoxometalates** and its activity as photocatalyst for degradation of aqueous hexachlorobenzene and dyes)
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 15 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:453687 HCAPLUS
DOCUMENT NUMBER: 141:162820
TITLE: **Polyoxometalates** on Cationic Silica Nanoparticles. Physicochemical Properties of an Electrostatically Bound Multi-Iron Catalyst
AUTHOR(S): **Okun, Nelya M.**; Ritorto, Michelle D.; Anderson, Travis M.; Apkarian, Robert P.; **Hill, Craig L.**
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Chemistry of Materials (2004), 16(13), 2551-2558
CODEN: CMATEX; ISSN: 0897-4756
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Reaction of a solution of the multi-iron **polyoxometalate** (POM) K9[(FeIII(OH2)2)3(A-α-PW9O34)2] (K91) with a colloidal suspension of cationic silica nanoparticles ((Si/AlO2)Cl) results in the production of a new heterogeneous oxidation catalyst (K81/(Si/AlO2)). Dynamic light scattering data, coupled with elemental anal. and streaming potential measurements suggests that there are 58 mols. of POM electrostatically bound to the surface of each silica particle on average Transmission electron microscopy confirms the presence of the POM on the surface of the cationic silica and shows the diameter of the (Si/AlO2)Cl and of the K81/(Si/AlO2) nanoparticles to be .apprx.12 and .apprx.17 nm, resp. Significantly, cryo-high-resolution SEM (cryo-HRSEM) shows that the POM retards the natural gelation process that colloidal silica is known to undergo upon aging. EPR and catalytic data collectively suggest that the exchange of the cationic silica for one of the nine K+ cations associated with each POM is responsible for subtle structural changes in the POM which result in its activation as a catalyst.

CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 66

ST **polyoxometalate** cationic silica nanoparticle property electrostatically bound multiiron catalyst

IT Colloids
Nanoparticles
Oxidation catalysts
Surface structure
(**polyoxometalates** on cationic silica nanoparticles and physicochem. properties of electrostatically bound multi-iron catalyst)

IT Heteropoly acids
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(**polyoxometalates** on cationic silica nanoparticles and physicochem. properties of electrostatically bound multi-iron catalyst)

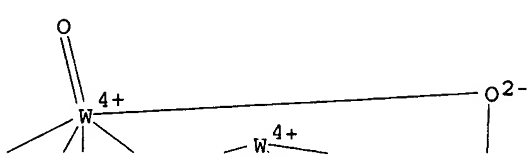
IT 7631-86-9, Silica, uses 728945-74-2
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(**polyoxometalates** on cationic silica nanoparticles and physicochem. properties of electrostatically bound multi-iron catalyst)

REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 16 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:304574 HCAPLUS
DOCUMENT NUMBER: 141:307138
TITLE: Study of some **polyoxometallates** of Keggin's type as potential antitumor agents

AUTHOR(S): Holclajtner-Antunovic, Ivanka; Kuntic, Vesna; Juranic, Zorica; Filipovic, Ivana; Mioc, Ubavka; Stanojkovic, Tatjana; Zizak, Zeljko
CORPORATE SOURCE: University School of Physical Chemistry, Belgrade, Yugoslavia
SOURCE: Jugoslovenska Medicinska Biohemija (2004), 23(1), 25-30
CODEN: JMBIFF; ISSN: 0354-3447
PUBLISHER: Drustvo Medicinskih Biohemicara Jugoslavije
DOCUMENT TYPE: Journal
LANGUAGE: English/Croatian
AB The antitumor action of three **polyoxometallate** compds. of Keggin's type: 12-molibdophosphoric acid (MoPA), 12-tungstophosphoric acid (WPA) and Mg salt of WPA (MgHWPA) was studied in vitro. For human cervix carcinoma (HeLa) cells survival, as well as for nonstimulated and stimulated peripheral blood mononuclear cells (PBMC), MTT test was applied and IC50 values of POMs were determinated. Index selectivity for WPA and MgHWPA are 1.9 and 1.8, calculated for nonstimulated, as well as 2.5 and 2.0, calculated for stimulated PBMS. **Combination** of studied POMs do not contribute to their lower IC50 values. Apoptosis detection implies mild cytotoxic effect of WPA and more cytostatical effect of MgHWPA. **Combination** of each of the studied POMs with caffeine decreases HeLa survival in dose dependent way. None of the studied POMs in the used concns. (up to 100 μmol/L) damages blood cells and/or decreases their number
IT **105814-03-7**
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(POM of keggin's type, MgHWPA acted cytostatically on stimulated and non-stimulated PBMC, HeLa cell and **combination** with caffeine decreased survival in human cervix carcinoma cells)
RN 105814-03-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, magnesium hydrogen (1:1:1) (9CI) (CA INDEX NAME)

PAGE 1-A



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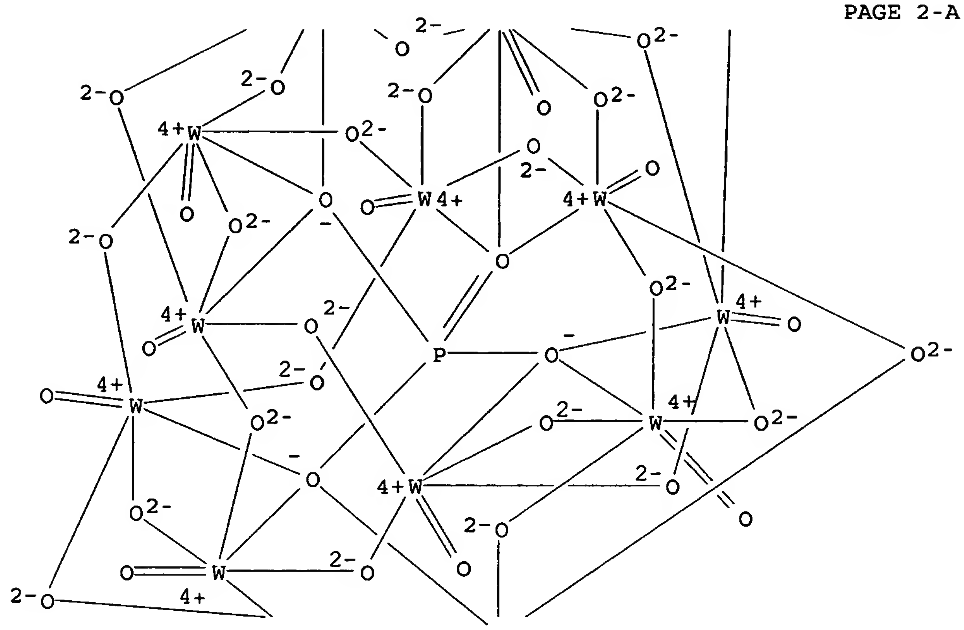
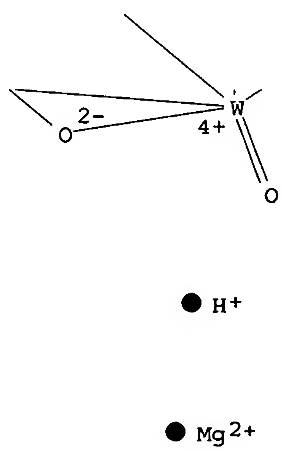
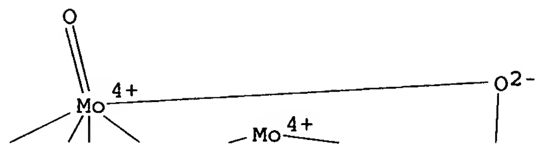


PAGE 3-A



IT **12026-57-2**, 12-Molybdophosphoric acid
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(POM of keggin's type, MoPA showed insignificant antiproliferative effect on stimulated and non-stimulated PBMC, HeLa cell and **combination** with caffeine decreased survival in human cervix carcinoma cells)
RN 12026-57-2 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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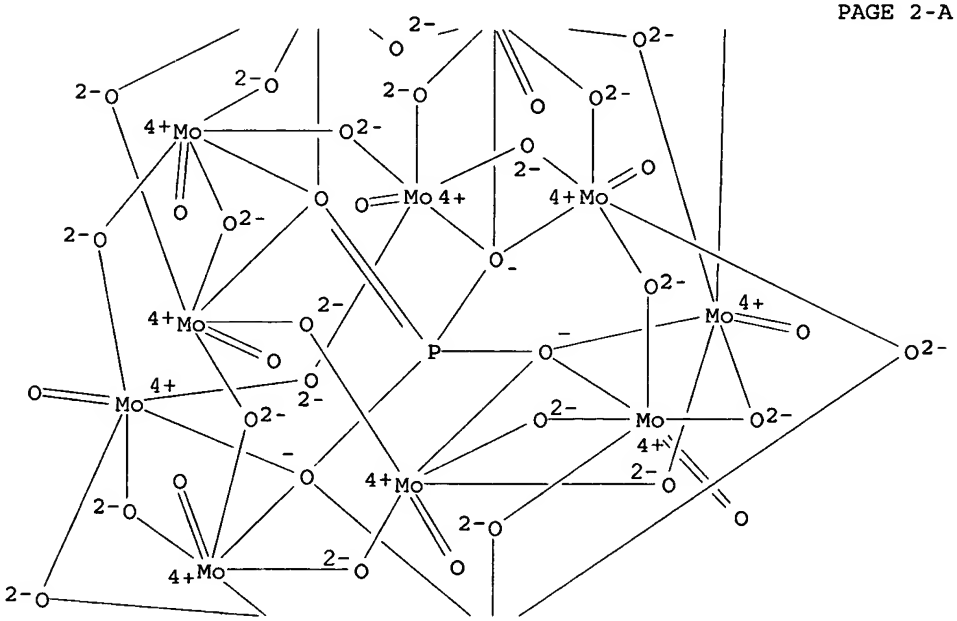

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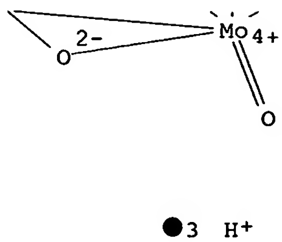

IT 1343-93-7, 12-Tungstophosphoric acid
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(POM of keggin's type, WPA showed mild antiproliferative effect on stimulated and non-stimulated PBMC, HeLa cell and **combination** with caffeine decreased survival in human cervix carcinoma cells)
RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

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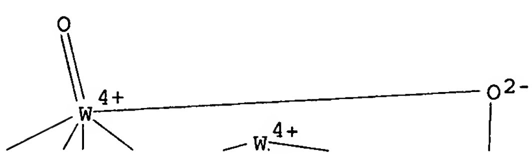

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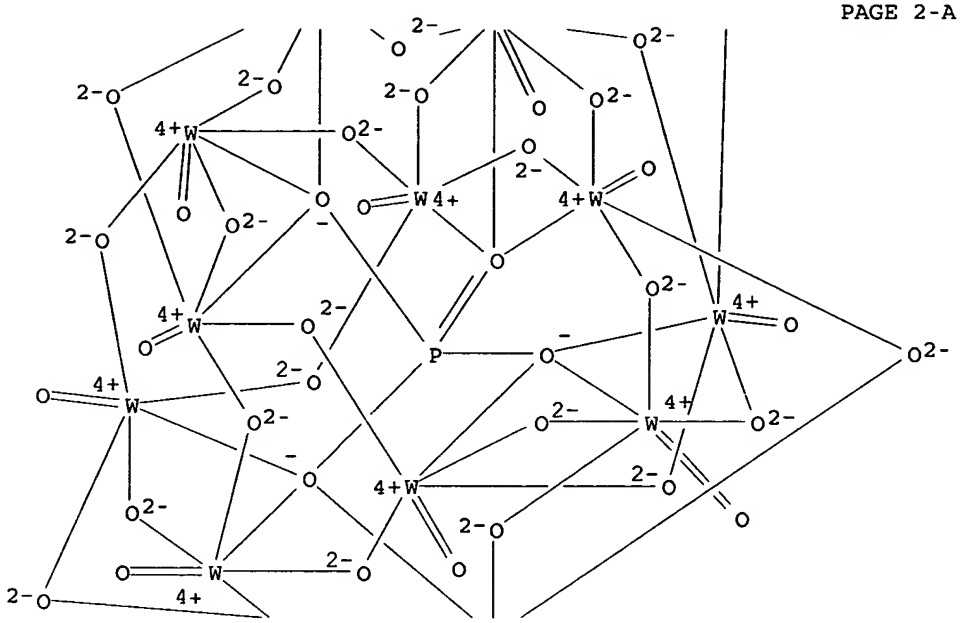

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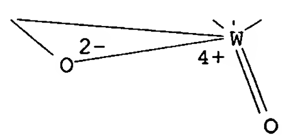

● 3 H^+

CC 1-6 (**Pharmacology**)
ST **polyoxometallate** keggin molibdophosphoric
tungstophosphoric acid antitumor apoptosis cervix carcinoma
IT Antitumor agents
Human
(POMs of keggin's type showed no considerable effect on survival with WPA showing mild cytotoxic effect, MgHWPA being more cytostatic, MoPA with insignificant effect and their **combination** with caffeine decreasing survival in human HeLa cell)
IT Uterus, neoplasm
(cervix, carcinoma; POMs of keggin's type showed no considerable effect on survival with WPA showing mild cytotoxic effect, MgHWPA being more cytostatic, MoPA with insignificant effect and their **combination** with caffeine decreasing survival in human HeLa cell)
IT Carcinoma
(cervix; POMs of keggin's type showed no considerable effect on survival with WPA showing mild cytotoxic effect, MgHWPA being more cytostatic, MoPA with insignificant effect and their **combination** with caffeine decreasing survival in human HeLa cell)
IT **105814-03-7**
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL

(Biological study); USES (Uses)
(POM of keggin's type, MgHWPA acted cytostatically on stimulated and non-stimulated PBMC, HeLa cell and **combination** with caffeine decreased survival in human cervix carcinoma cells)

IT **12026-57-2**, 12-Molybdophosphoric acid
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(POM of keggin's type, MoPA showed insignificant antiproliferative effect on stimulated and non-stimulated PBMC, HeLa cell and **combination** with caffeine decreased survival in human cervix carcinoma cells)

IT **1343-93-7**, 12-Tungstophosphoric acid
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(POM of keggin's type, WPA showed mild antiproliferative effect on stimulated and non-stimulated PBMC, HeLa cell and **combination** with caffeine decreased survival in human cervix carcinoma cells)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 17 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:271023 HCAPLUS
DOCUMENT NUMBER: 141:56014
TITLE: Effects of support on bifunctional methanol oxidation pathways catalyzed by **polyoxometallate** Keggin clusters
AUTHOR(S): Liu, Haichao; Iglesia, Enrique
CORPORATE SOURCE: E.O. Lawrence Berkeley National Laboratory, Chemical Sciences Division, Department of Chemical Engineering, University of California at Berkeley, Berkeley, CA, 94720, USA
SOURCE: Journal of Catalysis (2004), 223(1), 161-169
CODEN: JCTLA5; ISSN: 0021-9517
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:56014

AB $H_5PV_2Mo_{10}O_{40}$ **polyoxometallate** Keggin clusters supported on ZrO_2, TiO_2, SiO_2, and Al_2O_3 are effective catalysts for CH_3OH oxidation reactions to form HCHO, Me formate (MF), and dimethoxymethane (DMM). The rate and selectivity and the structure of supported clusters depend on the surface properties of the oxide supports. Raman spectroscopy showed that Keggin structures remained essentially intact on ZrO_2, TiO_2, and SiO_2 after treatment in air at 553 K, but decomposed to MoO_x and VO_x oligomers on Al_2O_3. Accessible protons per Keggin unit (KU) were measured during CH_3OH oxidation by titration with 2,6-di-tert-Bu pyridine. For similar KU surface d. (0.28 - 0.37 KU/nm^2), the number of accessible protons was larger on SiO_2 than on ZrO_2 and TiO_2 and much smaller on Al_2O_3 supports, even though residual di-Me ether (DME) synthesis rates after titrant saturation indicated that the fractional dispersion of KU was similar on the first three supports. These effects of support on structure and on H^+ accessibility reflect varying extents of interaction between **polyoxometallate** clusters and supports. Rates of CH_3OH oxidative dehydrogenation per KU were higher on ZrO_2 and TiO_2 than on SiO_2 at similar KU surface d. (0.28 - 0.37 KU/nm^2) and dispersion, indicating that redox properties of Keggin clusters depend on the identity of the support used to disperse them. The ZrO_2 and TiO_2 supports appear to enhance the reducibility of anchored **polyoxometallate** clusters. Rates were much lower on Al_2O_3, because structural degradation led to less reactive MoO_x and VO_x domains. CH_3OH reactions involve primary oxidation to

form HCHO and subsequent secondary reactions to form DMM and MF. These reactions involve HCHO-CH3OH acetalization steps leading to methoxymethanol (CH3OCH2OH) or hemiacetal intermediates, which condense with CH3OH on acid sites to form DMM or dehydrogenate to form MF. The COx formation rate is much lower than that of other reactions, and DME forms in parallel pathways catalyzed by acid sites. Secondary reactions leading to DMM and MF are strongly influenced by the support surface. Acidic SiO2 surfaces favored DMM formation, while amphoteric or dehydrogenating surfaces on ZrO2 and TiO2 led to MF formation, as a result of the varying role of each support in directing the reactions of HCHO and CH3OH and of the CH3OCH2OH intermediates toward DMM or MF, which was confirmed using phys. catalyst-**pure** support **mixts.** The reaction pathways are consistent with the effects of residence time and of the partial removal of H+ sites by titration using 2,6-di-tert-Bu pyridine.

IT **12293-21-9**, Molybdovanadophosphoric acid (H5Mo10V2PO40)
RL: CAT (Catalyst use); USES (Uses)
(oxidation catalyst; effects of oxide support acidity and surface structure on selectivity of Mo-V-P-O Keggin cluster catalyst in methanol oxidation rate and mechanism)

RN 12293-21-9 HCAPLUS

CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentahydrogen (9CI) (CA INDEX NAME)

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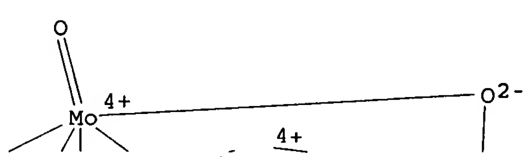

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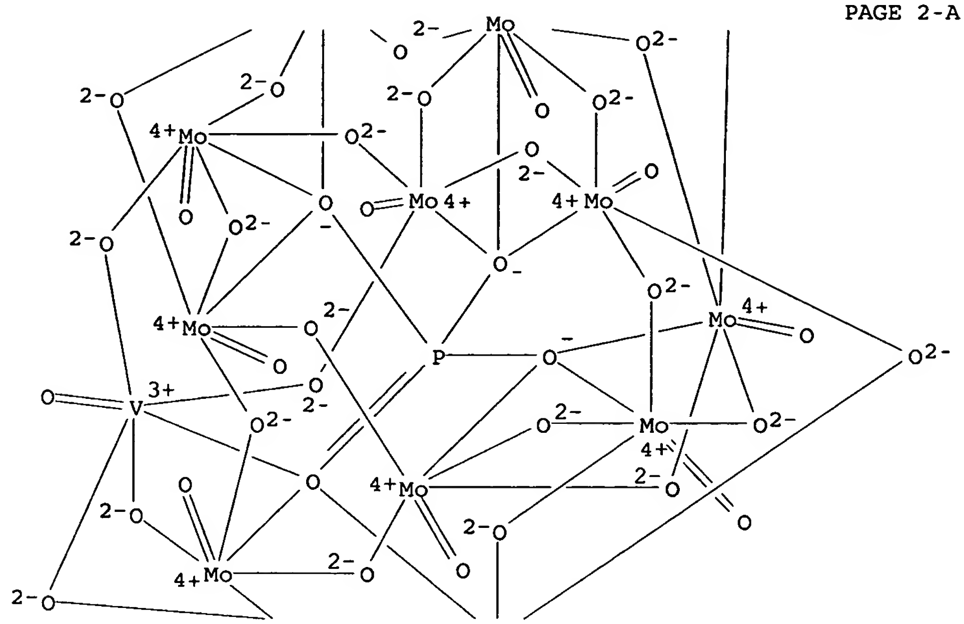

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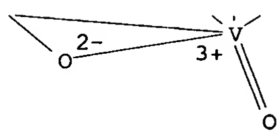


●5 H^+

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 23, 67

IT **12293-21-9**, Molybdovanadophosphoric acid (H5Mo10V2PO40)
RL: CAT (Catalyst use); USES (Uses)
(oxidation catalyst; effects of oxide support acidity and surface structure on selectivity of Mo-V-P-O Keggin cluster catalyst in methanol oxidation rate and mechanism)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 18 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:229264 HCAPLUS

TITLE: Multifunctional nanomaterials for catalytic decontamination and detection

AUTHOR(S): **Hill, Craig L.**; Neiwert, Wade A.; **Okun, Nelya M.**; Anderson, Travis M.; Ritorto, Michelle D.; Han, Jong Woo

CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, Atlanta, GA, 30322, USA

SOURCE: Abstracts of Papers, 227th ACS National Meeting, Anaheim, CA, United States, March 28-April 1, 2004 (2004), POLY-629. American Chemical Society: Washington, D. C.

CODEN: 69FGKM
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB New types of materials based on transition-metal oxygen-anion clusters (**polyoxometalates** or "POMs") have been developed for the detection and decontamination of a range of toxic mols. from indoor air pollutants to chemical warfare agents. Detection in most cases involves an oxidation of the toxic mol. and reduction of the POM with an attendant color change; catalytic decontamination usually involves this step followed by reoxidn. by O2 under ambient conditions. The first prototype material is a nanodomain comprised of 72 bridging catalytically active V6O13 units, each connected by 2 tri-triols via triester linkages. This material gels toxic agents, detects some by color change and catalyzes their oxidative degradation using air. Three other prototype detecting and/or decontaminating materials are POMs electrostatically bound to cationic fabrics ("catalytic cotton"), esterified-POM-based coordination polymers and POMs bridged by redox-active-metal counterions into microporous structures.

L114 ANSWER 19 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:105152 HCAPLUS
DOCUMENT NUMBER: 141:234961
TITLE: Inhibition of influenza virus infections in MDCK cells by rare earth borotungstates heteropoly blues with **mixed** valence
AUTHOR(S): Liu, Jie; Mei, Wen-Jie; Li, An-Xing; Tan, Cai-Ping; Shi, Shuo; Ji, Liang-Nian
CORPORATE SOURCE: Key Lab. Gene Eng. of Education Ministry, Coll. Chem. Chem. Eng., Zhongshan Univ., Guangzhou, 510275, Peop. Rep. China
SOURCE: Gaodeng Xuexiao Huaxue Xuebao (2004), 25(1), 1-6
CODEN: KTHPDM; ISSN: 0251-0790
PUBLISHER: Gaodeng Jiaoyu Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

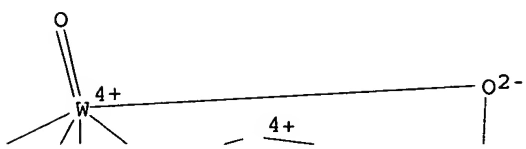
AB Transition metal-substituted **mixed**-valence rare earth borotungstate heteropoly blues, Ln2H3[BWVI9WV2Co(H2O)O39]·n H2O (Ln = La, Ce, Pr, Nd, Sm, Eu or Gd), were prepared and characterized by IR, UV, CV, XPS and electrochem. The cell toxicity and antiviral activity of these rare earth borotungstate heteropoly blues were investigated on the inhibitory effect against influenza (A/H1N1/Jingfang/1/91, A/H3N2/Jingfang/30/95, B/Hufang/1/87) in MDCK cells, and the results suggest that these complexes exhibit an significantly inhibitory activity, which are comparable with those obtained from virazole, against influenza virus infection, and no cytotoxicity is shown on normal cells. The correlation (relation) between the structure of these complexes and their anti-virus activities was also discussed.

IT **745826-21-5P 745826-22-6P 745826-23-7P 745826-27-1P 745826-30-6P 745826-36-2P 745826-41-9P**
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antiviral activity of cobalt-substituted **mixed**-valence rare earth borotungstate heteropoly blue complexes)

RN 745826-21-5 HCAPLUS

CN Tungstate(9-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp
a.O':κO':κO'':κO'':κO'':κO''':.kappa
.O''':κO''']]undeca-, lanthanum(3+) hydrogen (1:2:3) (9CI)
(CA INDEX NAME)

PAGE 1-A



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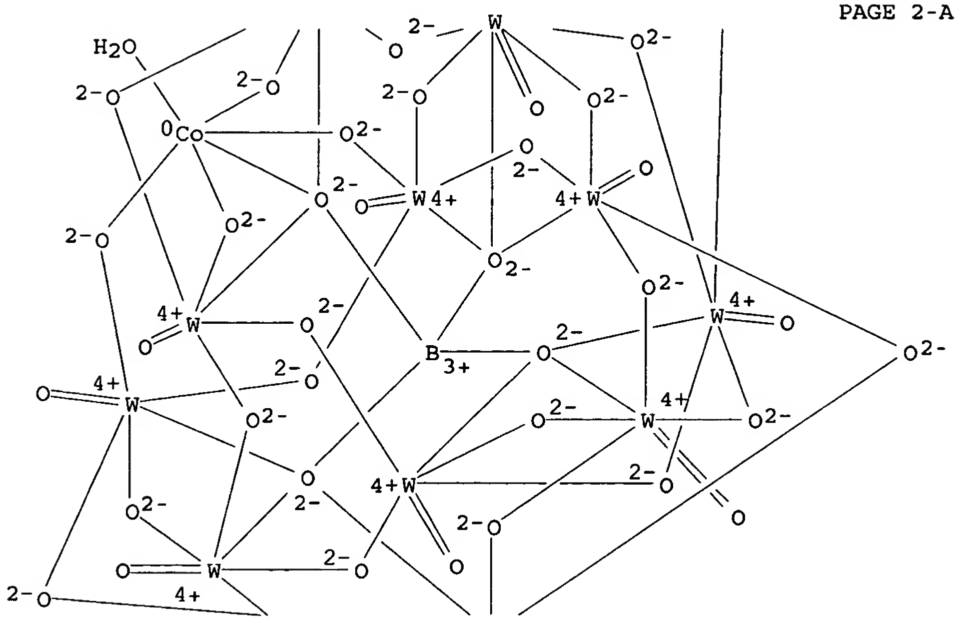

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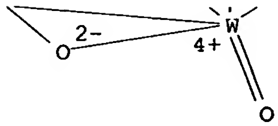

●3 H^+

●2 La(III) $^{3+}$

RN 745826-22-6 HCAPLUS
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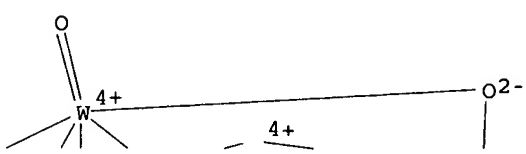
PAGE 1-A



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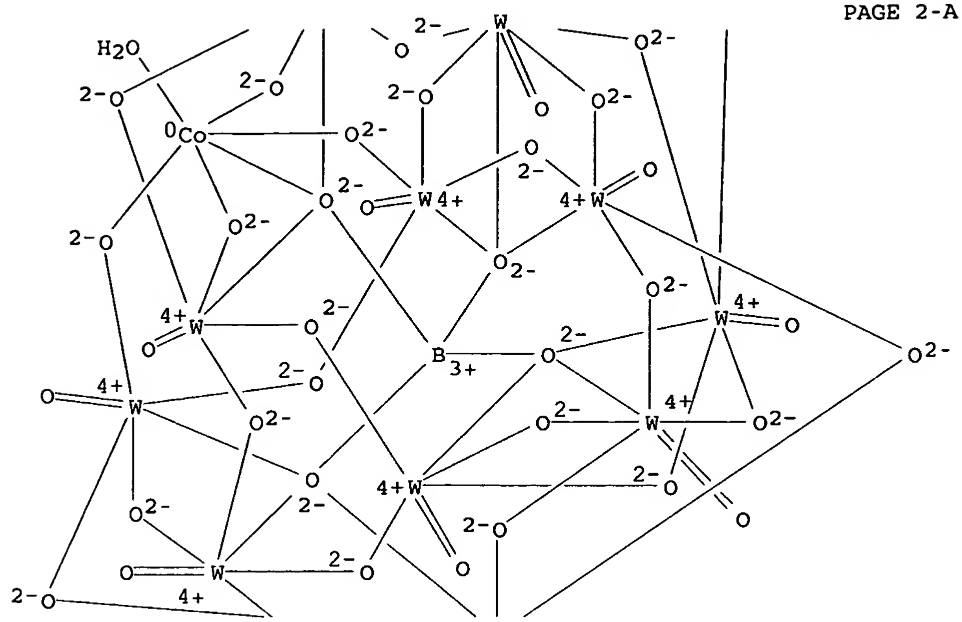

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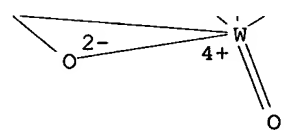
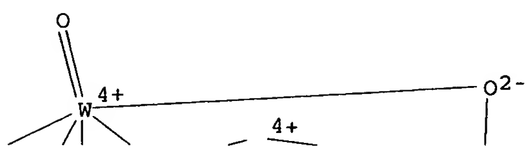


●2 Ce(III) $^{3+}$

●3 H^{+}

RN 745826-23-7 HCAPLUS
CN Tungstate(9-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]undeca-, praseodymium(3+) hydrogen (1:2:3) (9CI) (CA INDEX NAME)

PAGE 1-A



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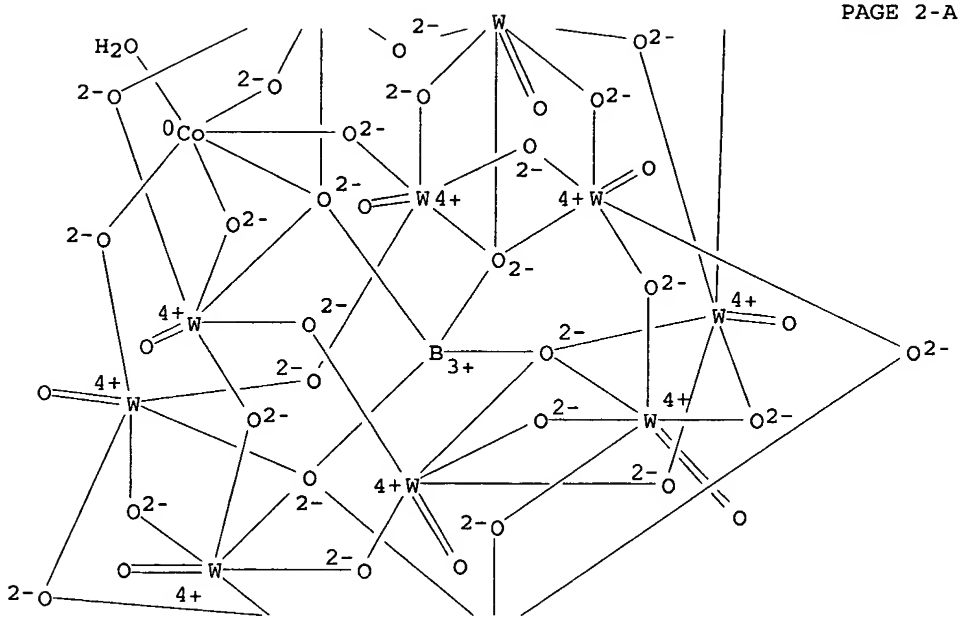

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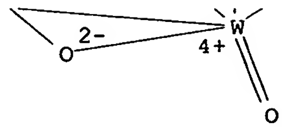

●3 H^+

●2 Pr(III) $^{3+}$

RN 745826-27-1 HCAPLUS

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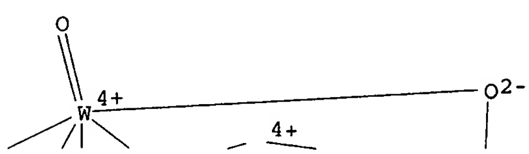
PAGE 1-A



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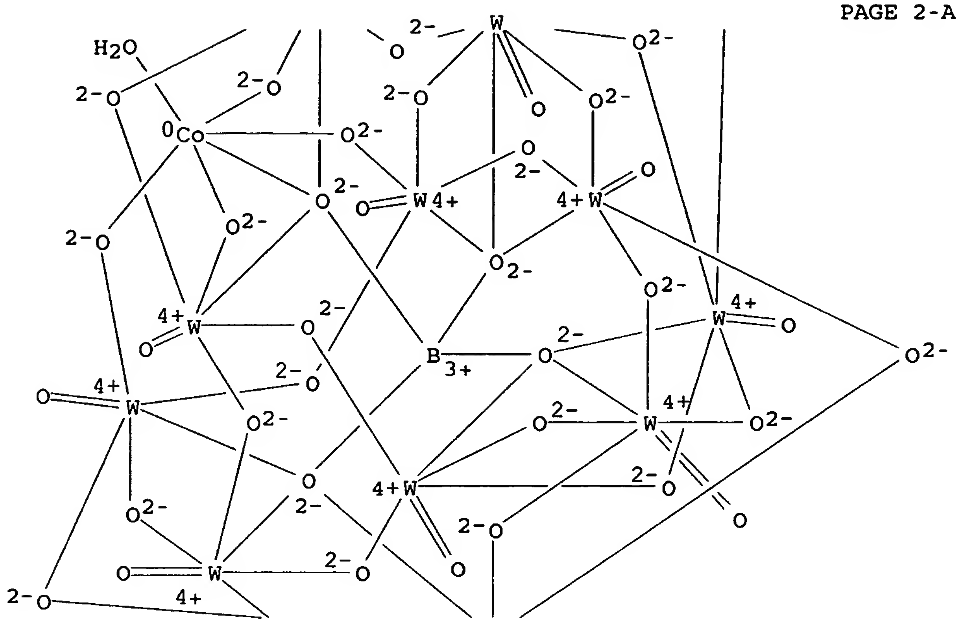

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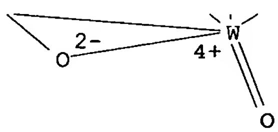

●3 H^+

●2 Nd(III) $^{3+}$

RN 745826-30-6 HCAPLUS
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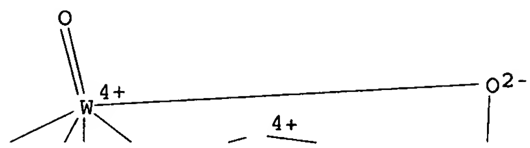
PAGE 1-A



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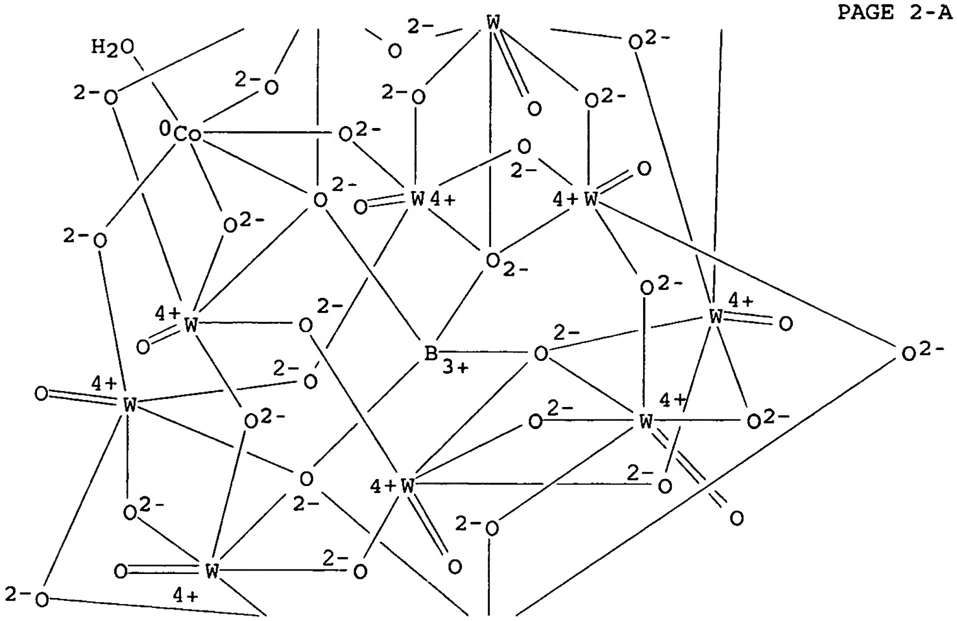

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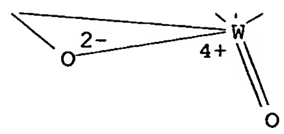
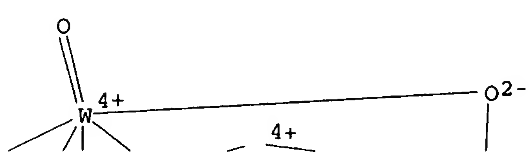


●3 H^+

●2 Sm(III) $^{3+}$

RN 745826-36-2 HCAPLUS
CN Tungstate(9-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]undeca-, europium(3+) hydrogen (1:2:3) (9CI) (CA INDEX NAME)

PAGE 1-A



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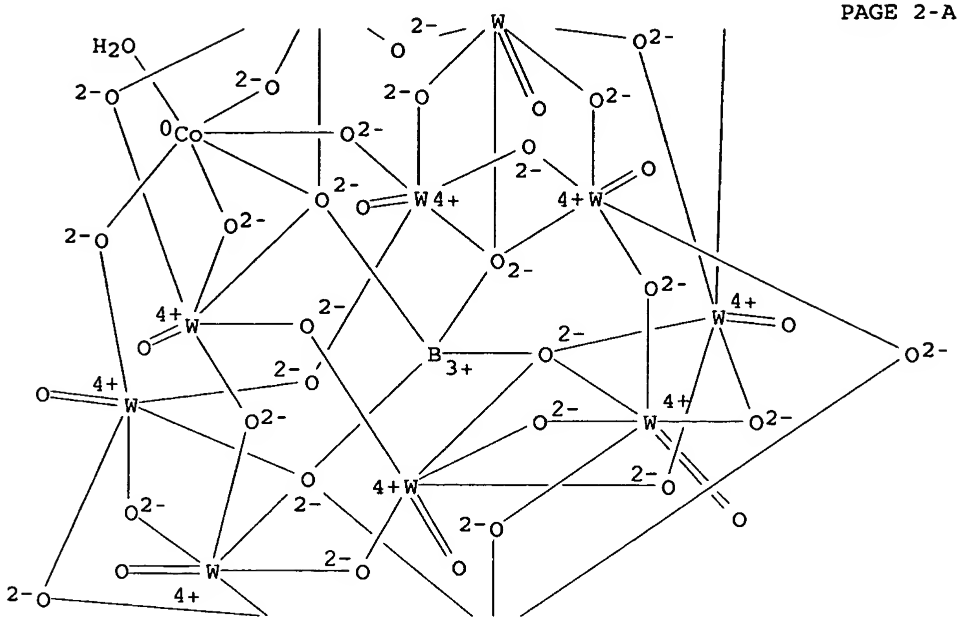

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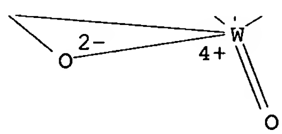
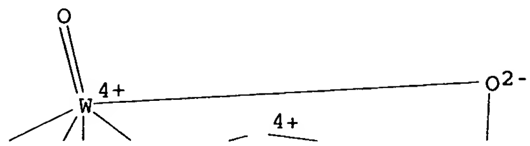


●2 Eu(III) $^{3+}$

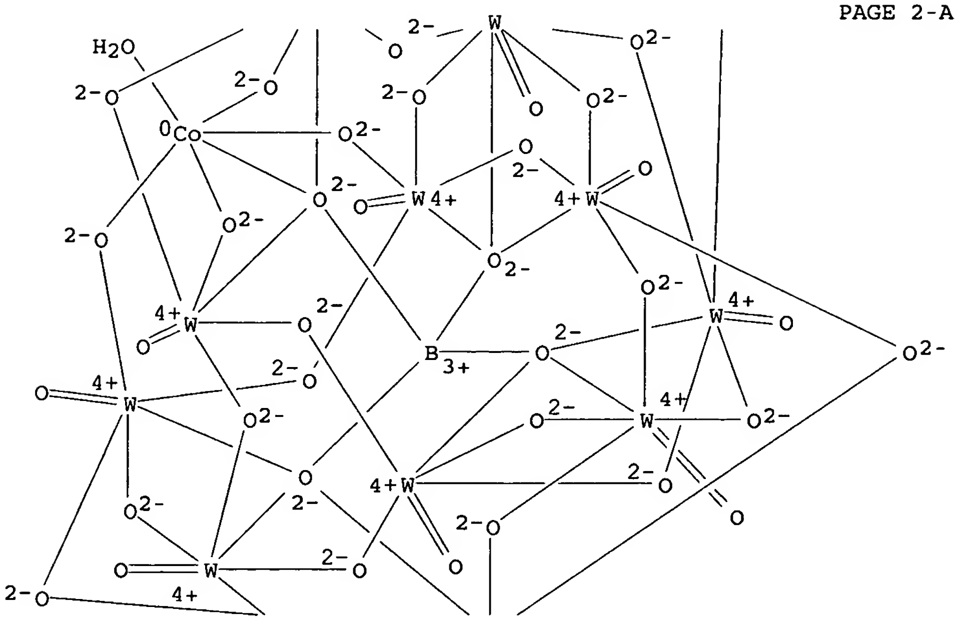
●3 H^+

RN 745826-41-9 HCAPLUS
CN Tungstate(9-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]undeca-, gadolinium(3+) hydrogen (1:2:3) (9CI) (CA INDEX NAME)

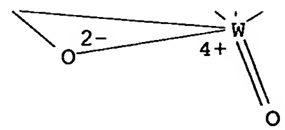
PAGE 1-A



PAGE 2-A



PAGE 3-A



●2 Gd(III) $^{3+}$

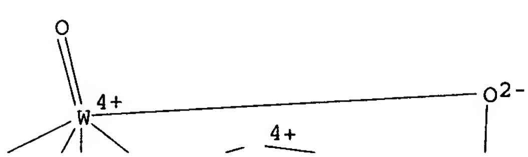
●3 H^+

IT **745826-12-4P 745826-14-6P 745826-16-8P**
745826-17-9P 745826-18-0P 745826-19-1P
745826-20-4P
RL: BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation and antiviral activity of cobalt-substituted **mixed**-valence rare earth borotungstate heteropoly blues complexes)

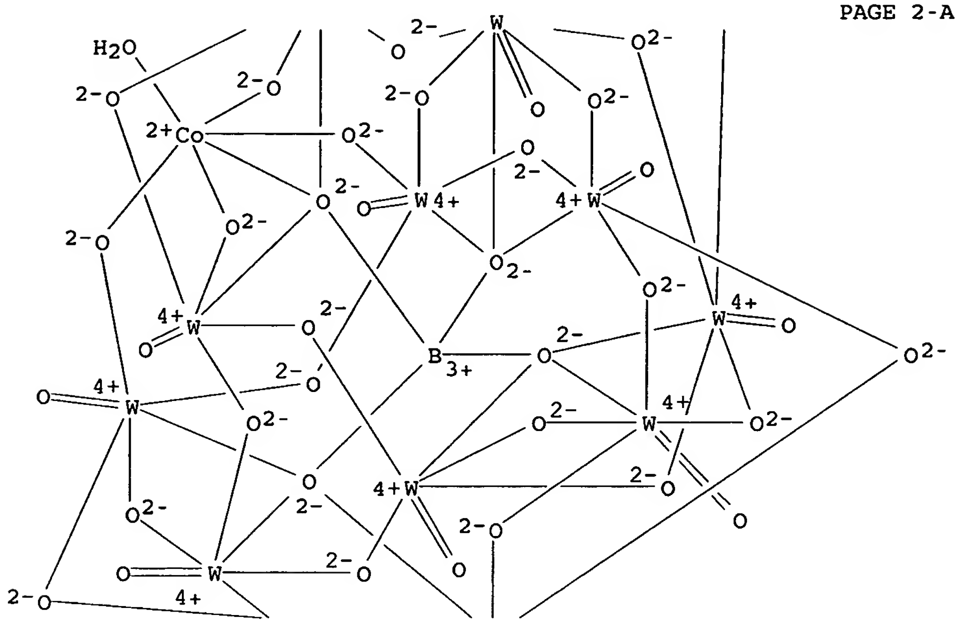
RN 745826-12-4 HCAPLUS

CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp
a.O':κO':κO'':κO'':κO'':κO''':.kappa
.O''':κO''']]undeca-, lanthanum(3+) hydrogen (1:2:1) (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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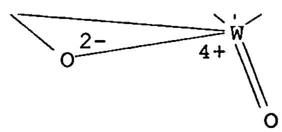
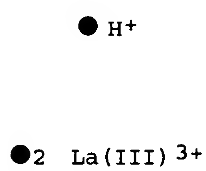
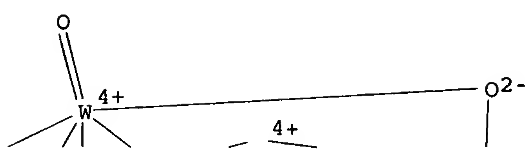




RN 745826-14-6 HCAPLUS
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]undeca-, cerium(3+) hydrogen (1:2:1) (9CI) (CA INDEX NAME)

PAGE 1-A



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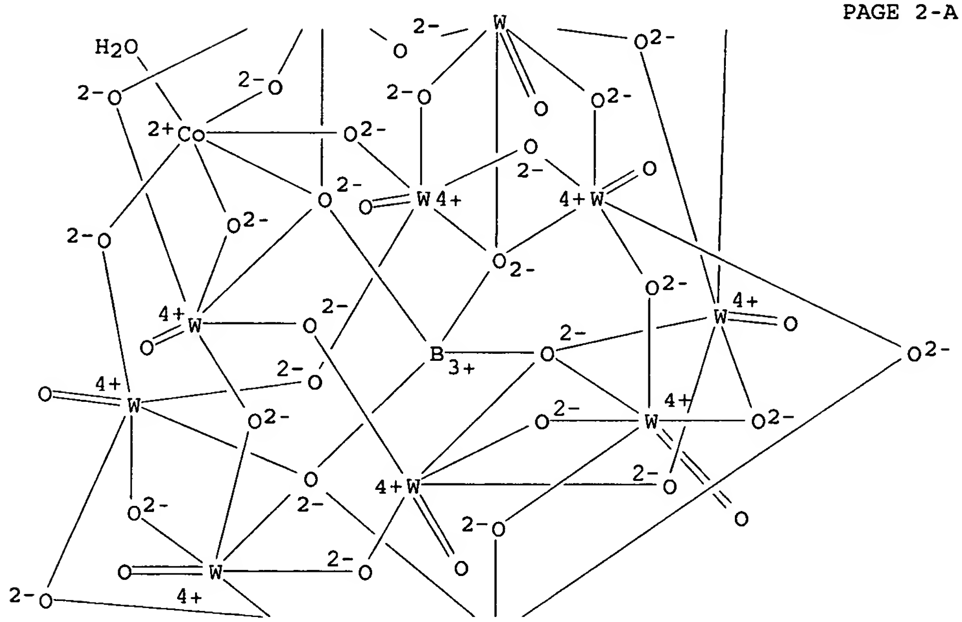

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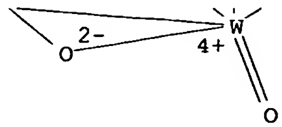
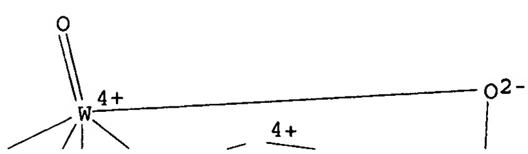


●2 Ce(III) $^{3+}$

● H^{+}

RN 745826-16-8 HCAPLUS
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]undeca-, praseodymium(3+) hydrogen (1:2:1) (9CI) (CA INDEX NAME)

PAGE 1-A



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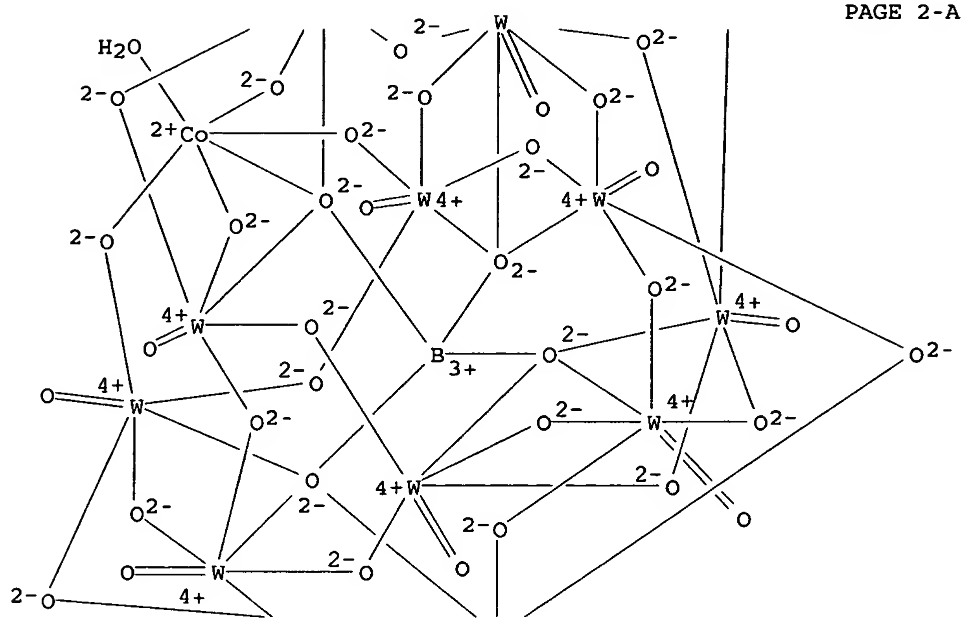

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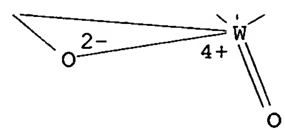
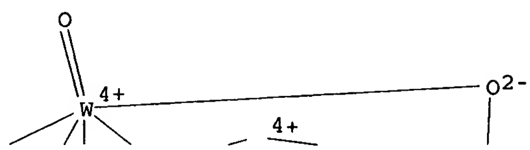


● H^+

●2 Pr(III) $^{3+}$

RN 745826-17-9 HCAPLUS
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]undeca-, neodymium(3+) hydrogen (1:2:1) (9CI) (CA INDEX NAME)

PAGE 1-A



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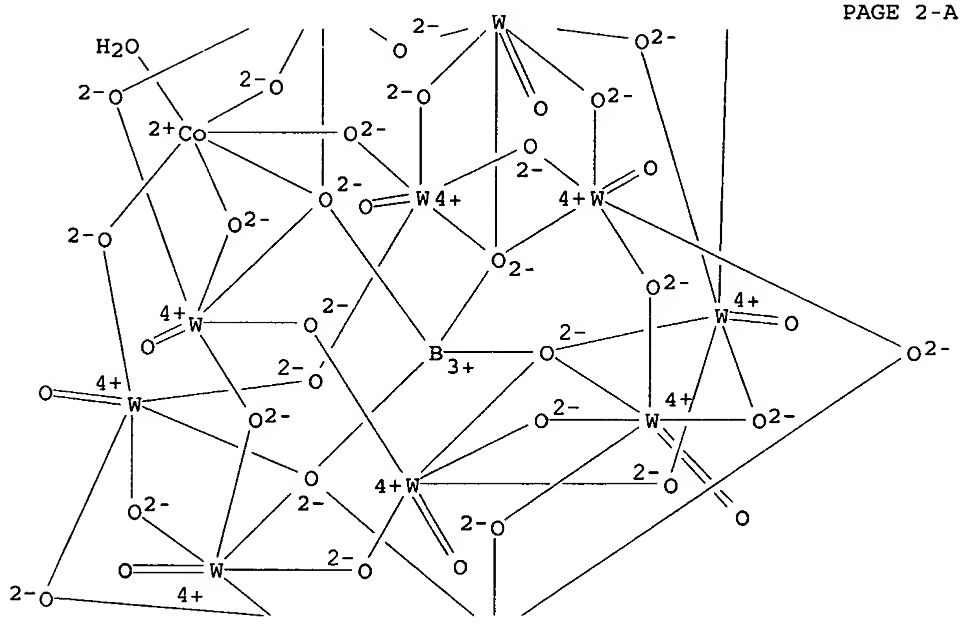
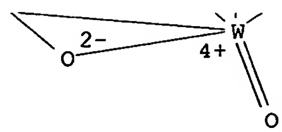


PAGE 3-A

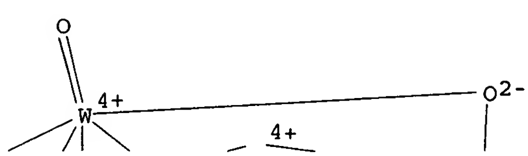


● H^+

●2 Nd(III) $^{3+}$

RN 745826-18-0 HCAPLUS
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]undeca-, samarium(3+) hydrogen (1:2:1) (9CI) (CA INDEX NAME)

PAGE 1-A



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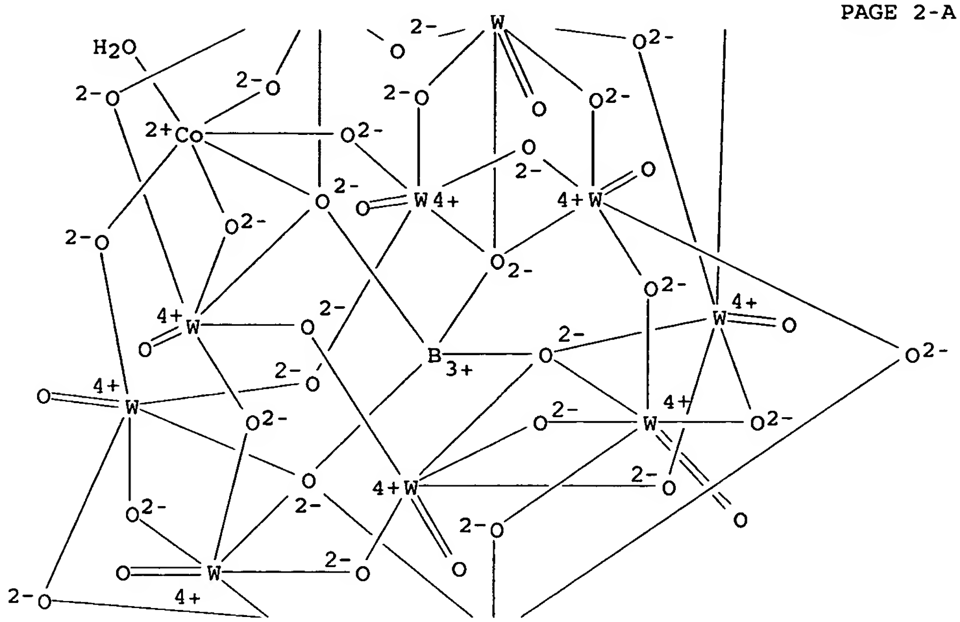
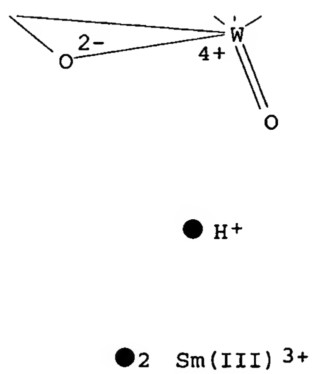
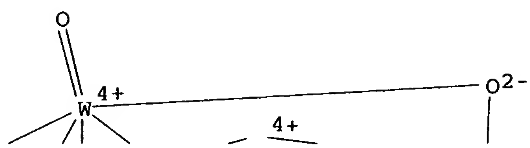


PAGE 3-A



RN 745826-19-1 HCAPLUS
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]undeca-, europium(3+) hydrogen (1:2:1) (9CI) (CA INDEX NAME)

PAGE 1-A



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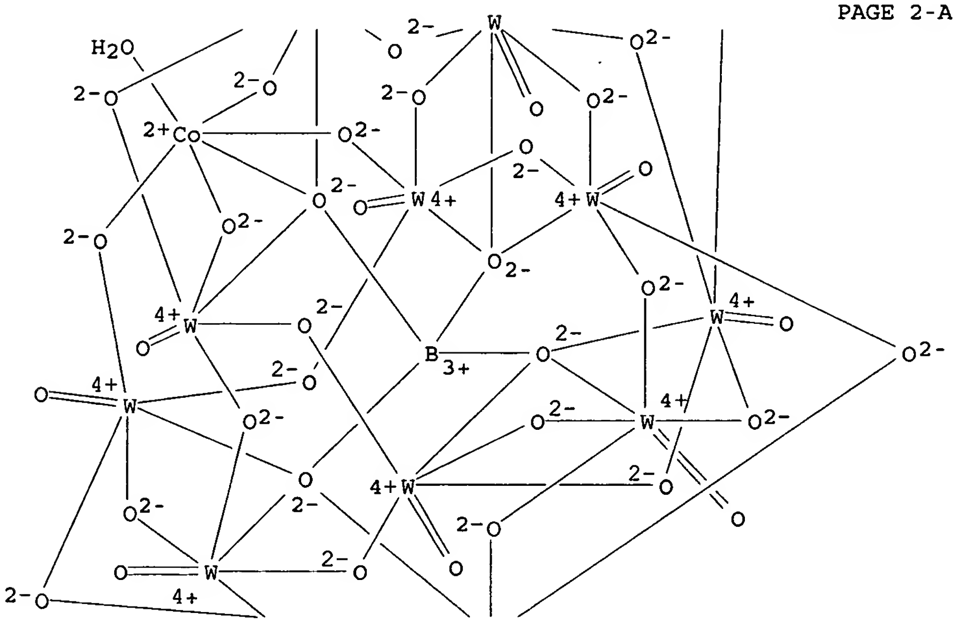

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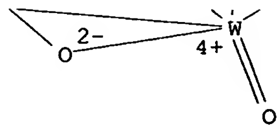
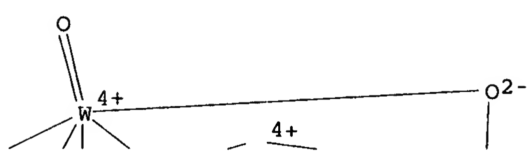


● 2 Eu(III) $^{3+}$

● H^+

RN 745826-20-4 HCAPLUS
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]undeca-, gadolinium(3+) hydrogen (1:2:1) (9CI) (CA INDEX NAME)

PAGE 1-A



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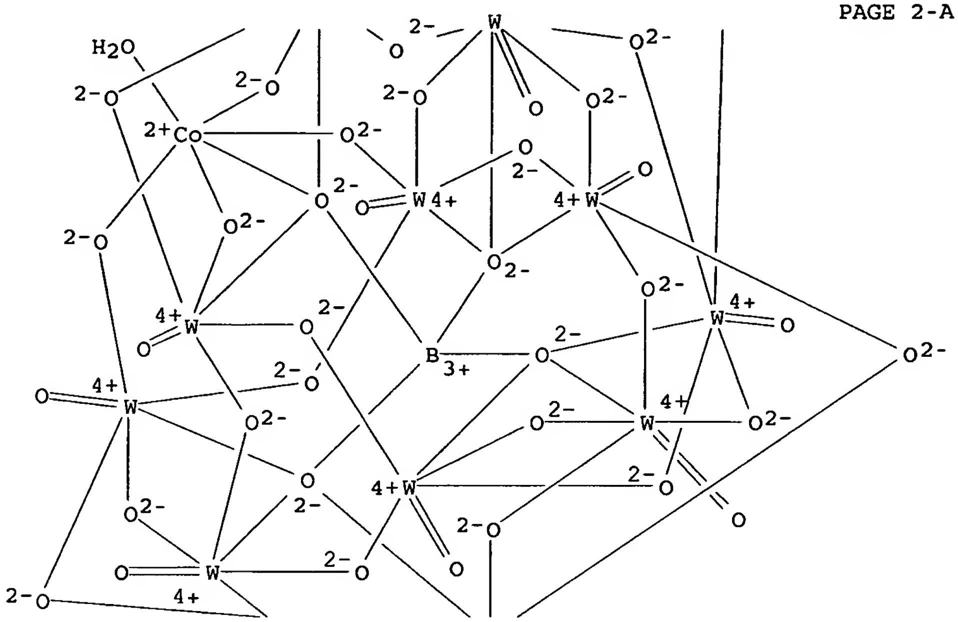

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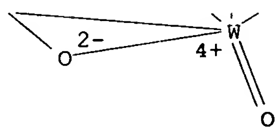


●2 Gd(III) $^{3+}$

● H^+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 1, **4**, 10
IT Animal cell line
(MDCK; antiviral activity of cobalt-substituted **mixed**
-valence rare earth borotungstate heteropoly blue complexes)
IT Antiviral agents
Influenza virus
(antiviral activity of cobalt-substituted **mixed**
-valence rare earth borotungstate heteropoly blue complexes)
IT Reduction, electrochemical
(preparation of cobalt-substituted **mixed**-valence rare
earth borotungstate heteropoly blue complexes by)
IT Rare earth complexes
RL: BSU (Biological study, unclassified); SPN (Synthetic
preparation); BIOL (Biological study); PREP (Preparation)
(tungstoboric acid complexes; antiviral activity of
cobalt-substituted **mixed**-valence rare earth
borotungstate heteropoly blue complexes)
IT Heteropoly acids

RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(tungstoboric, rare earth complexes; antiviral activity of cobalt-substituted **mixed**-valence rare earth borotungstate heteropoly blue complexes)

IT **745826-21-5P 745826-22-6P 745826-23-7P 745826-27-1P 745826-30-6P 745826-36-2P 745826-41-9P**
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and antiviral activity of cobalt-substituted **mixed**-valence rare earth borotungstate heteropoly blue complexes)

IT **745826-12-4P 745826-14-6P 745826-16-8P 745826-17-9P 745826-18-0P 745826-19-1P 745826-20-4P**
RL: BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation and antiviral activity of cobalt-substituted **mixed**-valence rare earth borotungstate heteropoly blues complexes)

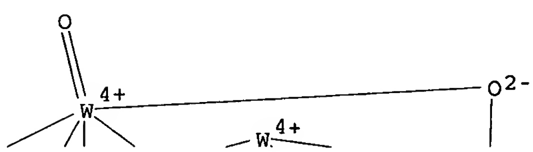
L114 ANSWER 20 OF 64 HCAPLUS

ACCESSION NUMBER: 2003:922792 HCAPLUS
DOCUMENT NUMBER: 140:116375
TITLE: Photocatalysis by Titanium Dioxide and **Polyoxometalate**/TiO2 Cocatalysts. Intermediates and Mechanistic Study
AUTHOR(S): Chen, Chuncheng; Lei, Pengxiang; Ji, Hongwei; Ma, Wanhong; Zhao, Jincai; Hidaka, Hisao; Serpone, Nick
CORPORATE SOURCE: Laboratory of Photochemistry, Center for Molecular Science, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SOURCE: Environmental Science and Technology (2004), 38(1), 329-337
CODEN: ESTHAG; ISSN: 0013-936X
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A representative **polyoxometalate**, α-12-tungstophosphatic acid (PW123-, POM), is loaded on the surface of TiO2 particles used as a cocatalyst to gain further insights into the underlying reaction mechanism and to estimate the feasibility of using the new POM/TiO2 cocatalyst in the photocatalytic degradation of 2,4-dichlorophenol (DCP) in aqueous media. Loading the PW123- species on the surface of TiO2 enhances charge separation in the UV-illuminated TiO2, thereby accelerating the hydroxylation of the initial DCP substrate but not the mineralization of DCP, which is somewhat suppressed in the presence of the **polyoxometalate.** An increase in the load of POM increases the concentration of aromatic intermediates, and more **toxic** intermediates, such as 2,6-dichlorodibenzo-p-dioxin, 2,4,6-trichlorophenol, are detected in the PW123-/TiO2 system. By contrast, cleavage of the whole conjugated structure of DCP predominates in TiO2-only dispersions. Strong ESR signals for the superoxide radical anionic species, O2-• (HO2• radicals in acidic media; pH <5) are detected in TiO2-only dispersions; signals of O2-• are much weaker in the TiO2/POM **composite** system under otherwise identical conditions. Exptl. results imply that enhancement of charge separation in TiO2 photocatalysis does not always result in improvement of the efficiency of mineralization of organic substrates, and the reaction between organic radical cations and the formed superoxide radical anions may be responsible for the mineralization of the

chlorophenol. xcvxzcvxzc 26d.
IT **1343-93-7 12534-77-9**
RL: CAT (Catalyst use); USES (Uses)
(intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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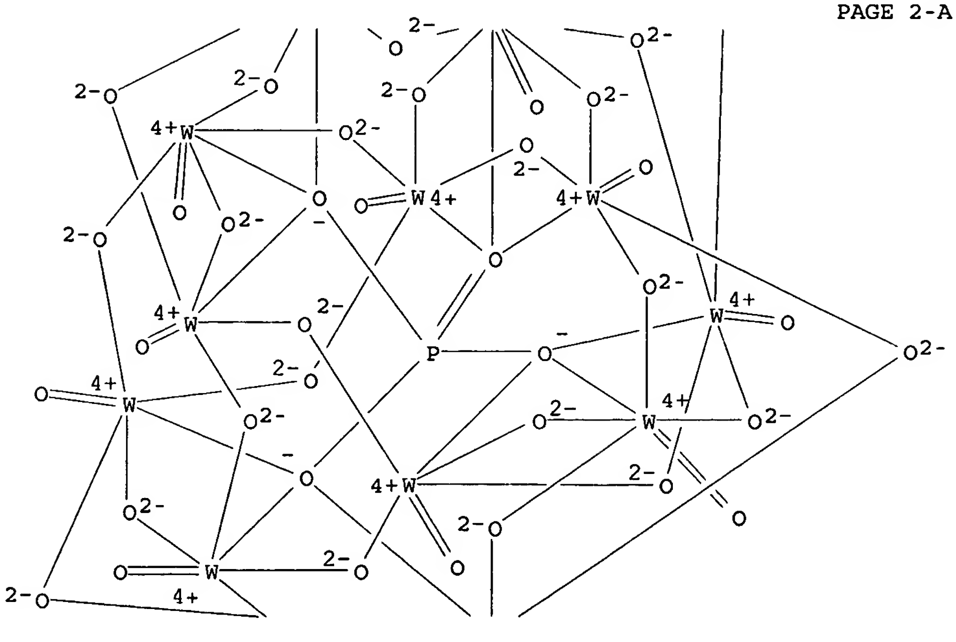

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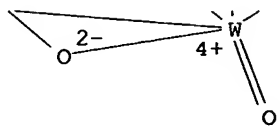
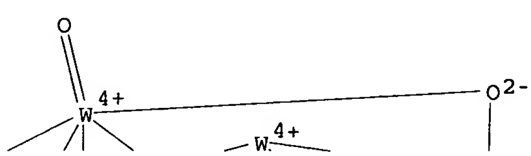


●3 H^+

RN 12534-77-9 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca- (9CI) (CA INDEX NAME)

PAGE 1-A



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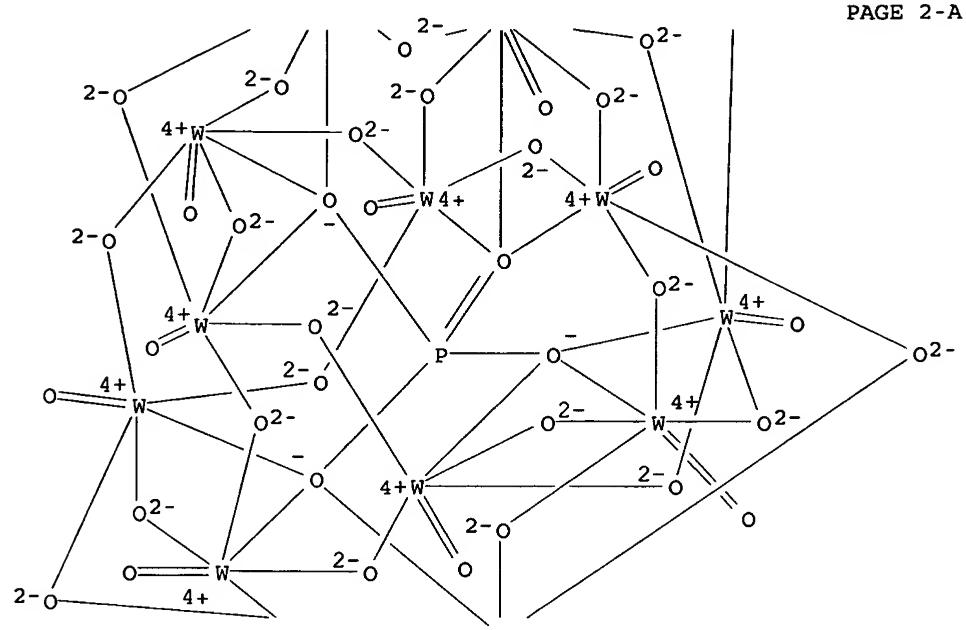

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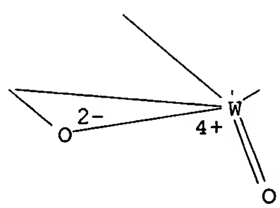

CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): 61, 74

ST trichlorophenol photocatalytic degrdn titania **polyoxometalate** cocatalyst intermediate mechanism

IT Photolysis
(catalytic; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)

IT Radicals, reactions
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
(formation and reactions of; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)

IT Electron transfer
Photolysis catalysts
(intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)

IT UV and visible spectra
(of catalysts; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)

IT Wastewater treatment
(oxidation, catalytic, photochem.; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2

cocatalysts of 2,4-dichlorophenol in relation to)
IT Decomposition
(photocatalytic; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
IT Wastewater treatment
Water **purification**
(photocatalytic; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol in relation to)
IT Water **purification**
(photooxidn., catalytic; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol in relation to)
IT Oxidation catalysts
(photooxidn.; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
IT 88-06-2, 2,4,6-Trichlorophenol 137-19-9, 4,6-Dichloro-1,3-benzenediol 2138-22-9, 1,2-Benzenediol, 4-chloro- 3170-83-0, Hydroperoxy 7722-84-1, Hydrogen peroxide (H2O2), reactions 11062-77-4, Superoxide 13673-92-2, 3,5-Dichloro-1,2-benzenediol
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
(formation and reactions of; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
IT 33857-26-0, 2,7-Dichlorodibenzodioxin
RL: POL (Pollutant); OCCU (Occurrence)
(formation and reactions of; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
IT 615-67-8, 2-Chlorohydroquinone
RL: RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
(formation and reactions of; intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
IT **1343-93-7 12534-77-9** 13463-67-7, Titanium dioxide, uses
RL: CAT (Catalyst use); USES (Uses)
(intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
IT 120-83-2, 2,4-Dichlorophenol
RL: RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
(intermediates and mechanism in photocatalysis by titania and **polyoxometalate**/TiO2 cocatalysts of 2,4-dichlorophenol)
REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 21 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:913046 HCAPLUS
DOCUMENT NUMBER: 139:392437
TITLE: Materials for degrading **contaminants**
INVENTOR(S): **Okun, Nelya; Hill, Craig L.**
PATENT ASSIGNEE(S): Emory University, USA
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

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     WO 2003094977        A2    20031120    WO 2003-US14375
                                                                 2003
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     WO 2003094977        A3    20040708
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             GQ, GW, ML, MR, NE, SN, TD, TG
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                                                                 2003
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PRIORITY APPLN. INFO.:                      US 2002-377740P     P
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                                                                 2003
                                                                 0505
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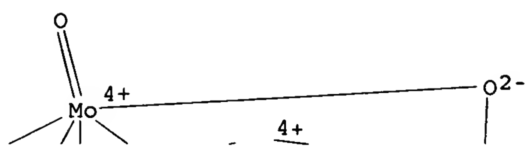
AB Embodiments of the present invention includes **compns.**, materials including the **compns.**, methods of using the **compns.**, and methods of degrading **contaminants**. The **composition** can include a **polyoxometalate**/cationic silica material. In addition, the **compns.** can be made of a **polyoxometalate**/cationic silica material, a copper (II) salt having a weakly bound anion, and a nitrate salts. Further, the **compns.** can be made of a **polyoxometalate**/cationic silica material, a copper (II) salt having a weakly bound anion, a compound selected from tetraethylammonium (TEA) nitrate, tetra-n-butylammonium (TBA) nitrate, and **combinations** thereof.

IT **625830-47-9**
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(cationic catalyst support; materials for degrading **contaminants**)

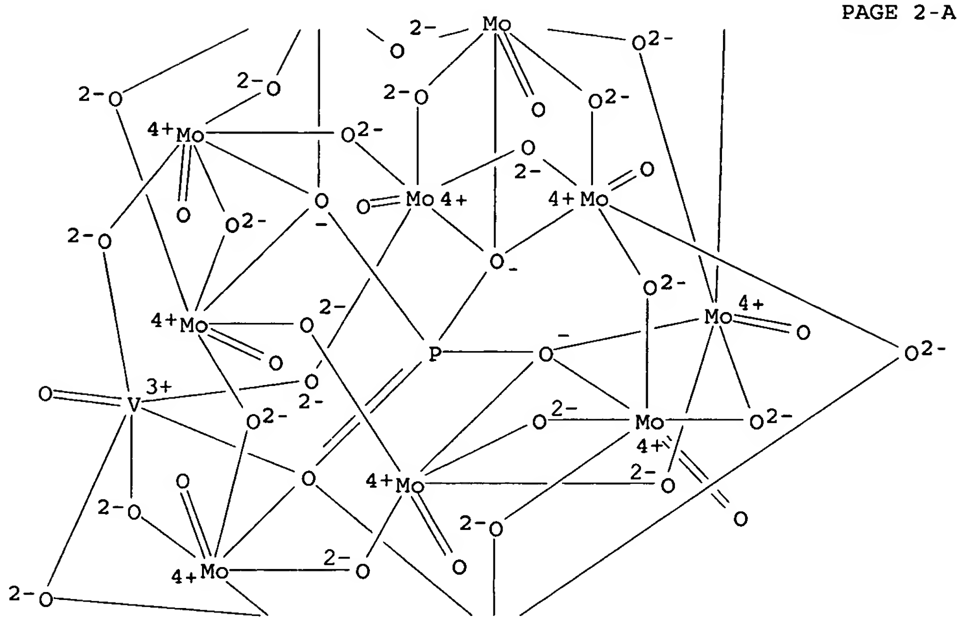
RN 625830-47-9 HCAPLUS

CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, tetrasodium (9CI) (CA INDEX NAME)

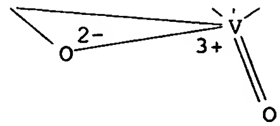
PAGE 1-A



PAGE 2-A

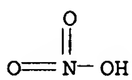


PAGE 3-A



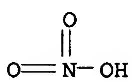
●4 Na^+

IT **3251-23-8**, Cupric nitrate **10141-05-6**, Cobalt nitrate **10421-48-4**, Ferric nitrate **13138-45-9**, Nickel nitrate **13770-18-8**, Cupric perchlorate **34946-82-2**, Cupric triflate **38465-60-0**, Cupric tetrafluoroborate **73131-99-4**
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(materials for degrading **contaminants**)
RN 3251-23-8 HCAPLUS
CN Nitric acid, copper(2+) salt (8CI, 9CI) (CA INDEX NAME)



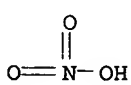
●1/2 Cu(II)

RN 10141-05-6 HCAPLUS
CN Nitric acid, cobalt(2+) salt (8CI, 9CI) (CA INDEX NAME)



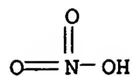
●1/2 Co(II)

RN 10421-48-4 HCAPLUS
CN Nitric acid, iron(3+) salt (8CI, 9CI) (CA INDEX NAME)



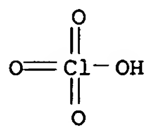
●1/3 Fe(III)

RN 13138-45-9 HCAPLUS
CN Nitric acid, nickel(2+) salt (8CI, 9CI) (CA INDEX NAME)



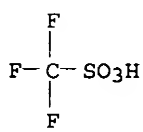
●1/2 Ni(II)

RN 13770-18-8 HCAPLUS
CN Perchloric acid, copper(2+) salt (8CI, 9CI) (CA INDEX NAME)



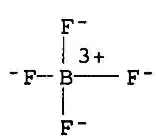
●1/2 Cu(II)

RN 34946-82-2 HCAPLUS
CN Methanesulfonic acid, trifluoro-, copper(2+) salt (9CI) (CA INDEX NAME)



●1/2 Cu(II)

RN 38465-60-0 HCAPLUS
CN Borate(1-), tetrafluoro-, copper(2+) (2:1) (9CI) (CA INDEX NAME)

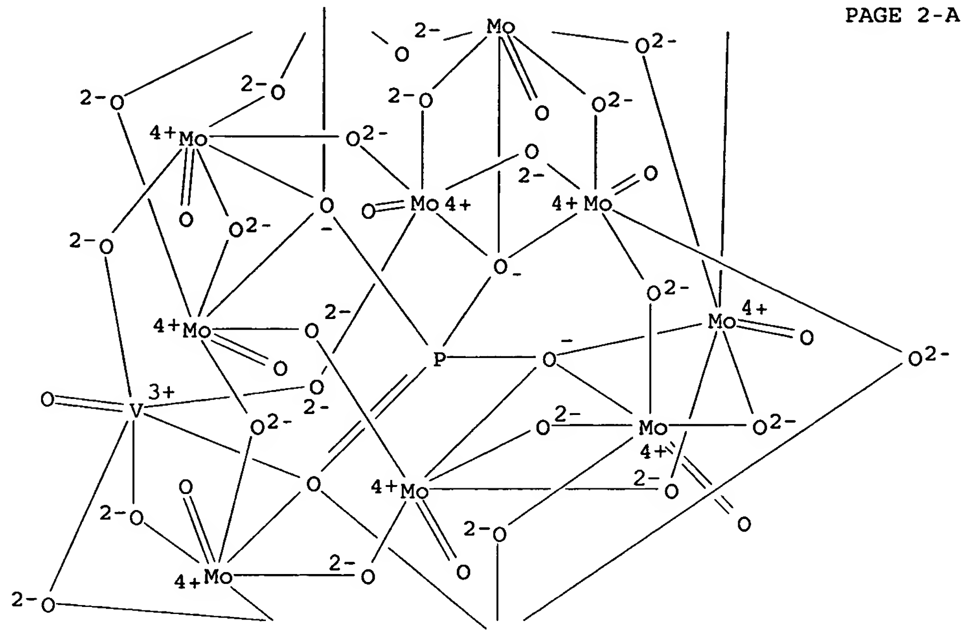


●1/2 Cu(II)$^{2+}$

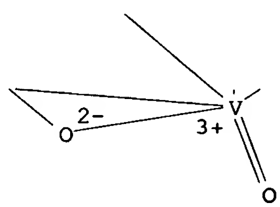
RN 73131-99-4 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentasodium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●5 Na^+

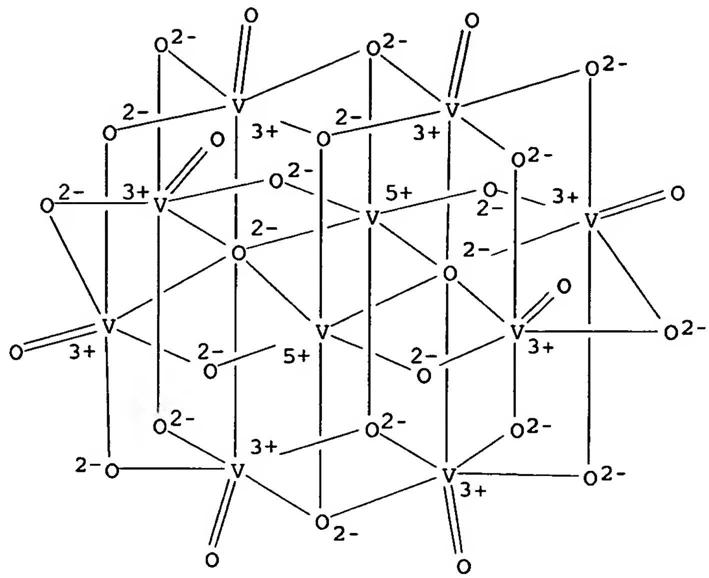
IT 59858-44-5P 134360-58-0P
RL: NUU (Other use, unclassified); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(materials for degrading **contaminants**)

RN 59858-44-5 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, tetradeca-μ-oxo-tetra-μ3-oxodi-μ6-oxooctaoxodecavanadate(6-) (6:1) (9CI) (CA INDEX NAME)

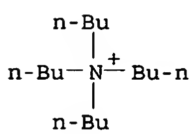
CM 1

CRN 12397-12-5
CMF O28 V10
CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N



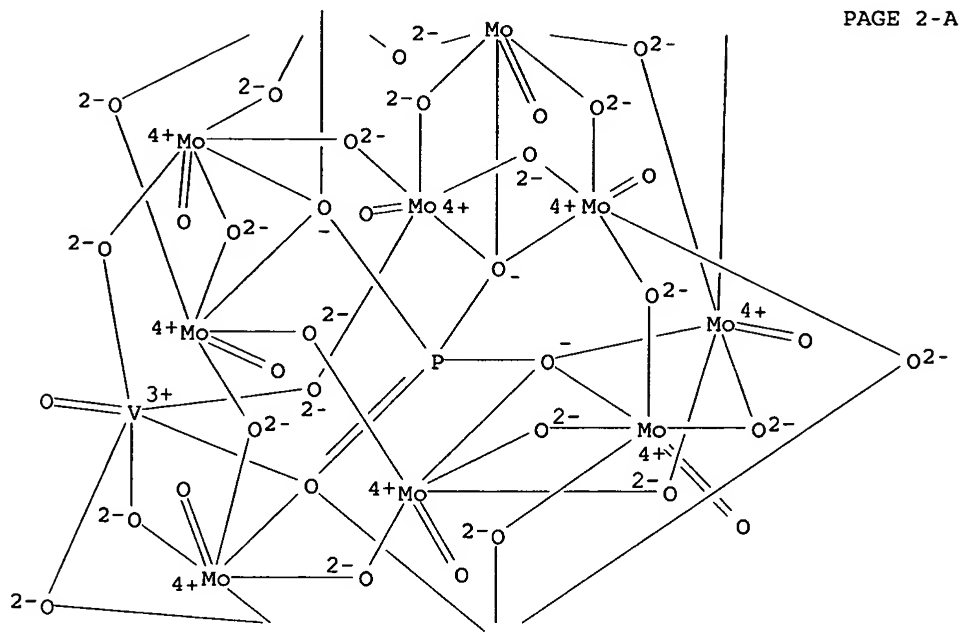
RN 134360-58-0 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]divanadate(5-) (5:1) (9CI) (CA INDEX NAME)

CM 1

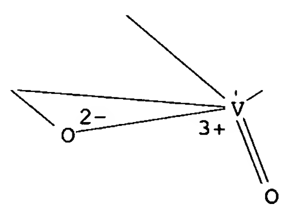
CRN 58071-93-5
CMF Mo10 O40 P V2
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A

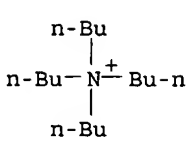


PAGE 3-A



CM 2

CRN 10549-76-5
CMF C16 H36 N



IC ICM A61L
CC 4-3 (**Toxicology**)
ST chem **warfare** agent **decontamination**;
oxometalate cationic silica chem **warfare** agent
decontamination; copper salt oxometalate cationic silica
chem **warfare** agent **decontamination**
IT Infection
(anthrax; materials for degrading **contaminants**)
IT Biological **warfare** agents
Chemical **warfare** agents
Decontamination

(materials for degrading **contaminants**)
IT Heteropoly acids
RL: NUU (Other use, unclassified); USES (Uses)
(materials for degrading **contaminants**)
IT Aldehydes, reactions
Halogen compounds
RL: RCT (Reactant); REM (Removal or disposal); PROC (Process);
RACT (Reactant or reagent)
(materials for degrading **contaminants**)
IT Nitrates, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant
or reagent); USES (Uses)
(transition metal; materials for degrading **contaminants**
)
IT 625455-59-6 625455-61-0 **625830-47-9** 625830-48-0
625830-49-1 625830-52-6
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant
or reagent); USES (Uses)
(cationic catalyst support; materials for degrading
contaminants)
IT 173358-70-8, Bindzil CAT
RL: NUU (Other use, unclassified); USES (Uses)
(materials for degrading **contaminants**)
IT **3251-23-8**, Cupric nitrate **10141-05-6**, Cobalt
nitrate **10421-48-4**, Ferric nitrate 12200-88-3
13138-45-9, Nickel nitrate **13770-18-8**, Cupric
perchlorate **34946-82-2**, Cupric triflate
38465-60-0, Cupric tetrafluoroborate **73131-99-4**
625830-46-8 625830-51-5
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant
or reagent); USES (Uses)
(materials for degrading **contaminants**)
IT **59858-44-5P 134360-58-0P** 194925-14-9P
RL: NUU (Other use, unclassified); RCT (Reactant); SPN (Synthetic
preparation); PREP (Preparation); RACT (Reactant or reagent); USES
(Uses)
(materials for degrading **contaminants**)
IT 1941-26-0, Tetraethylammonium nitrate 1941-27-1,
Tetrabutylammonium nitrate
RL: NUU (Other use, unclassified); REM (Removal or disposal); PROC
(Process); USES (Uses)
(materials for degrading **contaminants**)
IT 625830-54-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(materials for degrading **contaminants**)
IT 50-00-0, Formaldehyde, reactions 74-93-1, Methyl mercaptan,
reactions 75-07-0, Acetaldehyde, reactions 75-18-3, Dimethyl
sulfide 75-44-5, Phosgene 75-50-3, Trimethylamine, reactions
79-09-4, Propionic acid, reactions 100-42-5, Styrene, reactions
107-44-8, Sarin 107-92-6, n-Butyric acid, reactions 109-52-4,
n-Valeric acid, reactions 110-01-0, Tetrahydrothiophene
110-81-6, Diethyl disulfide 110-86-1, Pyridine, reactions
352-93-2, Diethyl sulfide 503-74-2, Isovaleric acid 624-92-0,
Dimethyl disulfide 630-08-0, Carbon monoxide, reactions
693-07-2, 2-Chloroethyl ethyl sulfide 7440-38-2D, Arsenic,
compds. 7664-41-7, Ammonia, reactions 7704-34-9D, Sulfur,
compds. 7727-37-9D, Nitrogen, compds. 7783-06-4, Hydrogen
sulfide, reactions
RL: RCT (Reactant); REM (Removal or disposal); PROC (Process);
RACT (Reactant or reagent)
(materials for degrading **contaminants**)

L114 ANSWER 22 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:796298 HCAPLUS
DOCUMENT NUMBER: 139:293699
TITLE: Liquid **cleaning compositions**

containing proteolytic enzyme and **polyoxometalate**

INVENTOR(S): Adriaanse, Arend Jan; Van Dijk, Willem Robert; Hage, Ronald
PATENT ASSIGNEE(S): Unilever Home & Personal Care, USA, Division of Conopco, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003191040	A1	20031009	US 2003-397413	20030326
CA 2476321	AA	20031009	CA 2003-2476321	20030211
WO 2003083030	A1	20031009	WO 2003-EP1398	20030211

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AU 2003205759	A1	20031013	AU 2003-205759	20030211
EP 1487954	A1	20041222	EP 2003-702631	20030211

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 2003008170	A	20050104	BR 2003-8170	20030211

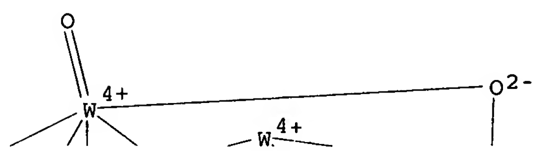
PRIORITY APPLN. INFO.: GB 2002-7430 A 20020328
WO 2003-EP1398 W 20030211

AB An aqueous liquid **cleaning composition** comprises a proteolytic enzyme and a primary stabilizer such as sodium tetraborate, as well as a **polyoxometalate** as a secondary enzyme stabilizer, such as (Me3NH)4(NbO2)PW11O39.

IT **165275-44-5 608526-64-3**
RL: TEM (Technical or engineered material use); USES (Uses) (secondary enzyme stabilizer; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)

RN 165275-44-5 HCAPLUS
CN Tungstate(10-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]henei
cosa-μ-oxononaoxo(triaquatri-μ-oxotricuprate)nona-,
decapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



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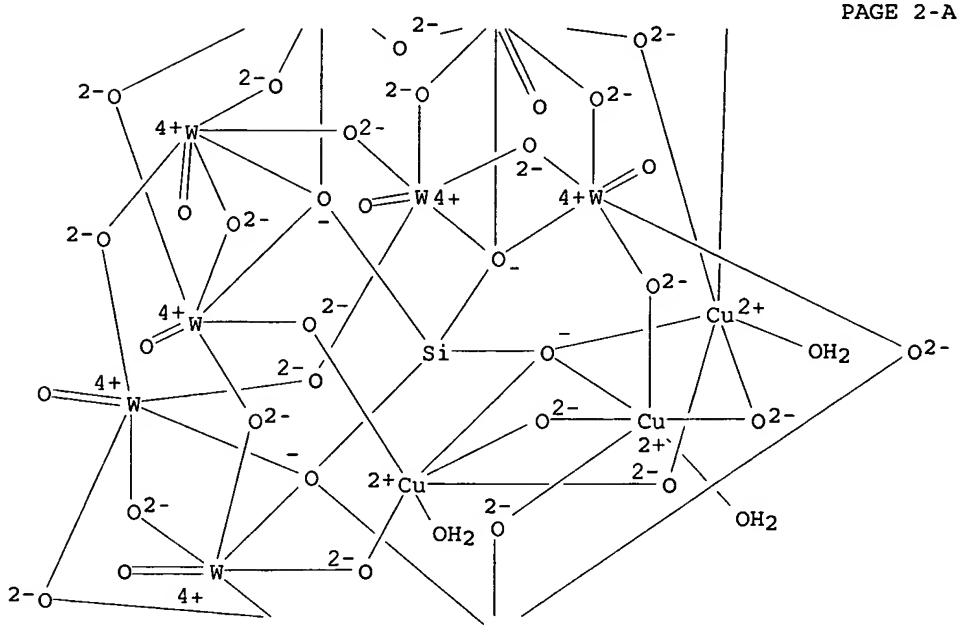
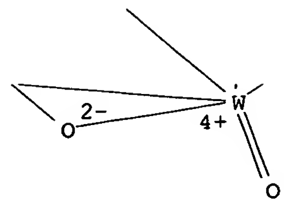


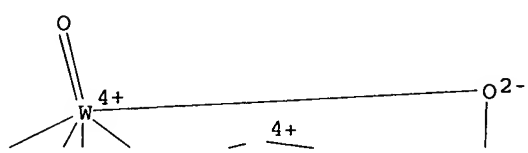


PAGE 3-A

●10 K^+

RN 608526-64-3 HCAPLUS
CN Tungstate(6-), aluminate(aquacobaltate)tetracosa-μ-oxotetra-μ4-oxoundecaoxoundeca-, hexasodium (9CI) (CA INDEX NAME)

PAGE 1-A



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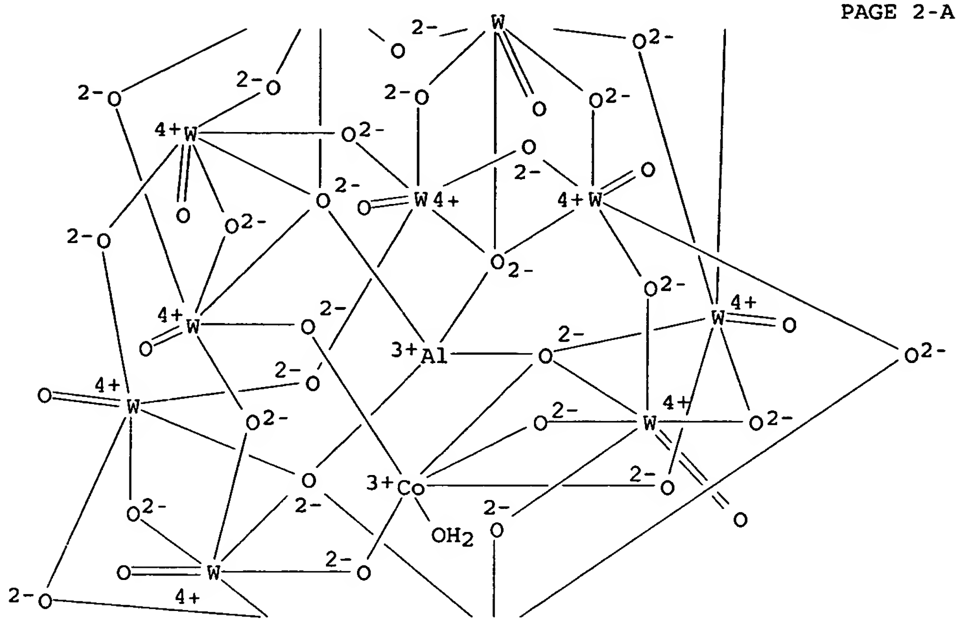
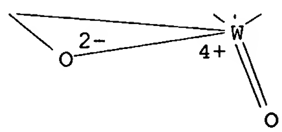


PAGE 3-A



●6 Na^+

IC ICM C11D003-386
INCL 510267000; 510392000; 510530000
CC 46-5 (Surface Active Agents and Detergents)
ST sodium tetraborate proteolytic enzyme stabilizer detergent; **polyoxometalate** enzyme stabilizer detergent
IT Detergents
(bleaching; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)
IT Detergents
(laundry, enzyme-containing; liquid **cleaning compns**. containing proteolytic enzyme and **polyoxometalate**)
IT Detergents
(liquid; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)
IT Heteropoly acids
RL: TEM (Technical or engineered material use); USES (Uses)
(secondary enzyme stabilizer; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)
IT 37259-58-8D, Serine protease, modified
RL: TEM (Technical or engineered material use); USES (Uses)
(bacterial; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)
IT 1330-43-4, Sodium tetraborate 7775-19-1, Sodium metaborate

10043-35-3, Boric acid, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(enzyme stabilizer; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)
IT 9014-01-1, Subtilisin
RL: NUU (Other use, unclassified); USES (Uses)
(liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)
IT 9001-92-7, Proteolytic enzyme
RL: NUU (Other use, unclassified); USES (Uses)
(protease; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)
IT 110717-67-4 **165275-44-5** 172304-20-0 273201-44-8
608526-64-3 608526-65-4
RL: TEM (Technical or engineered material use); USES (Uses)
(secondary enzyme stabilizer; liquid **cleaning compns.** containing proteolytic enzyme and **polyoxometalate**)

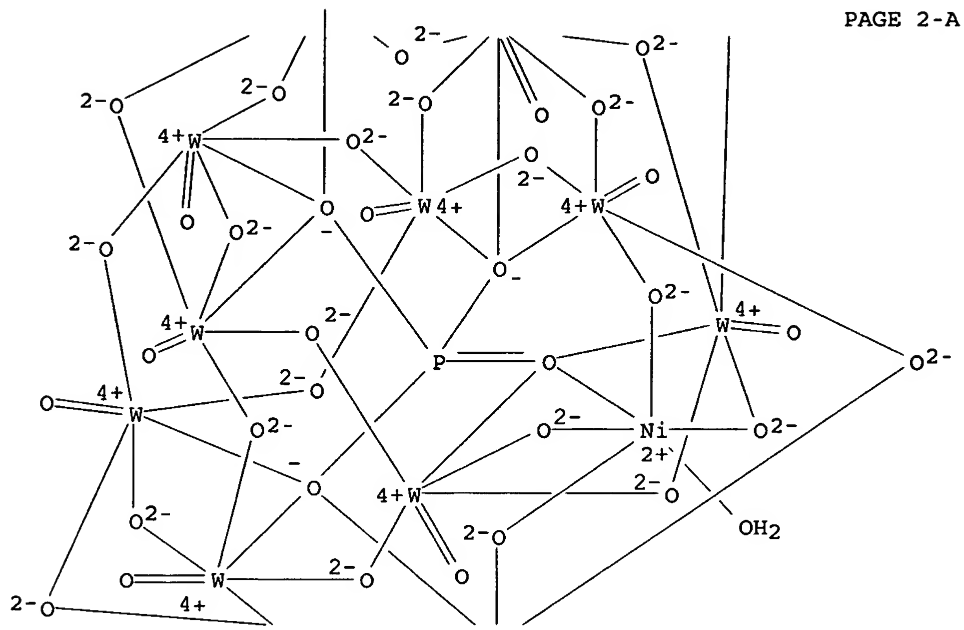
L114 ANSWER 23 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	2003:574606 HCAPLUS
DOCUMENT NUMBER:	140:67483
TITLE:	Preparation, characterization, and photocatalytic activity of POM-APS-silica hybrid catalysts
AUTHOR(S):	Li, Li; Guo, Yi-xing; Yang, Yu; Zhou, Ping; Jiang, Chun-jie
CORPORATE SOURCE:	Faculty of Chemistry and Chemical Engineering, Qiqihar University, Qiqihar, 16100, Peop. Rep. China
SOURCE:	Fenzi Kexue Xuebao (2003), 19(1), 33-39 CODEN: JMOSE7; ISSN: 1000-9035
PUBLISHER:	Dongbei Shifan Daxue Xueshu Jikanshe
DOCUMENT TYPE:	Journal
LANGUAGE:	Chinese

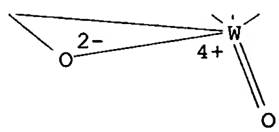
AB Amine-functionalized mesoporous silica materials **impregnated** with transition- metal-monosubstituted **polyoxometalate** cluster, K5[Ni(H2O)PW11O39] (PW11Ni), were prepared by coordination of nickel centers in the cluster with the amine surface groups in silica supports. XRD, UV/DRS,FT - IR, ICP - AES, Elemental anal. were used to characterize the structure and **composition** of the **composite**, and the photocatalytic activity of the **composite** was studied through photocatalytic degradation of dye Rhodamine B(RB). The exptl. results indicated that the photocatalytic activity of the **composite** was higher than that of the direct photolysis and the **pure** PW11Ni in the homogeneous system. Moreover, this kind of catalyst was insol., and it could be reused.
IT **37194-75-5**
RL: CAT (Catalyst use); USES (Uses)
(**polyoxometalate**-amine-functionalized silica hybrid photocatalysts)
RN 37194-75-5 HCAPLUS
CN Tungstate(5-), (aquanickelate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kap pa.O'κO'':κO'':κO'':κO''':κO''':.kap pa.O''']]undeca-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

PAGE 2-A



PAGE 3-A



●5 K^+

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **polyoxometalate** amine functionalized silica hybrid photocatalyst
IT Photolysis catalysts
(**polyoxometalate**-amine-functionalized silica hybrid photocatalysts)
IT Heteropoly acids
RL: CAT (Catalyst use); USES (Uses)
(**polyoxometalate**-amine-functionalized silica hybrid photocatalysts)
IT 81-88-9, Rhodamine B
RL: RCT (Reactant); RACT (Reactant or reagent)
(decomposition catalyzed by **polyoxometalate**-amine-functionalized silica hybrid photocatalysts)
IT 919-30-2D, silica derivs. 7631-86-9, Silica, uses
37194-75-5
RL: CAT (Catalyst use); USES (Uses)
(**polyoxometalate**-amine-functionalized silica hybrid photocatalysts)

L114 ANSWER 24 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:505835 HCAPLUS
DOCUMENT NUMBER: 140:69574

TITLE: Synthesis of Heteropoly Acids and Their Salts Using Mechanochemical Activation

AUTHOR(S): Molchanov, V. V.; Maksimov, G. M.; Maksimovskaya, R. I.; Goidin, V. V.; Buyanov, R. A.
CORPORATE SOURCE: Siberian Division, Boreskov Institute of Catalysis, Russian Academy of Sciences, Novosibirsk, 630090, Russia

SOURCE: Inorganic Materials (Translation of Neorganicheskie Materialy) (2003), 39(7), 687-693
CODEN: INOMAF; ISSN: 0020-1685
PUBLISHER: MAIK Nauka/Interperiodica Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

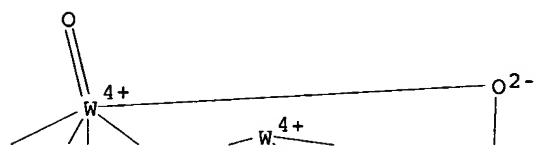
AB A method is proposed for the synthesis of heteropoly acids from oxides of Mo, W, and V via mechanochem. activation. The fundamental principles of this approach to the synthesis of heteropoly acids containing different ligands and heteroatoms are **formulated.** The new V2O5·nMoO3 compds. synthesized in this work are highly reactive with H3PO4, which is due to the unsatd. coordination of the V cations and the low structural perfection of these compds. The application area of the proposed method is established. It appears to be most effective in the synthesis of phosphomolybdovanadic and phosphomolybdic heteropoly acids. In some instances, heteropoly acids can be prepared by solid-state reactions, which makes it possible to use V2O5·nMoO3 compds. with $n \leq 6$ as starting reagents. The method has a number of important advantages: the process is waste-free, requires a shorter synthesis time and involves a smaller number of steps as compared to the existing processes, affords an increased yield of heteropoly acids, and involves no **explosion**- or fire-hazardous steps.

IT **1343-93-7P**, 12-Tungstophosphoric acid **11074-20-7P** **12026-57-2P**, 12-Molybdophosphoric acid **12027-12-2P** , 12-Molybdosilicic acid **12027-38-2P**, 12-Tungstosilicic acid **12293-15-1P** **12293-21-9P** **12293-24-2P** **12398-73-1P** **54327-43-4P** **92627-47-9P** **92627-49-1P** **92627-50-4P** **92627-51-5P** **174281-83-5P** **638165-41-0P** **638165-43-2P** **638989-95-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation via mechanochem. activation.)

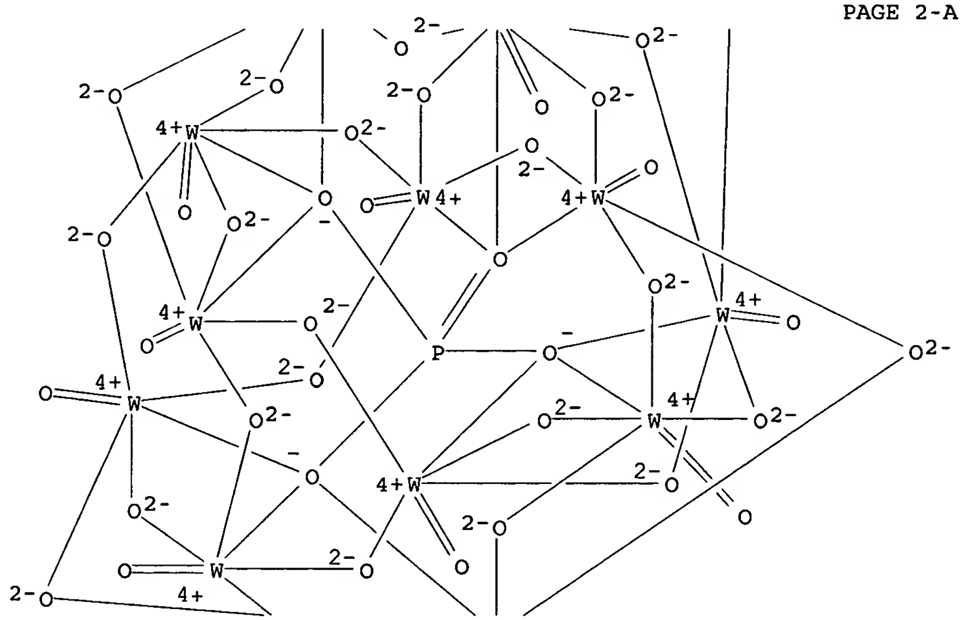
RN 1343-93-7 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

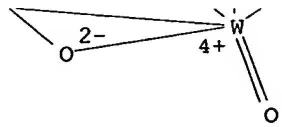
PAGE 1-A



PAGE 2-A



PAGE 3-A

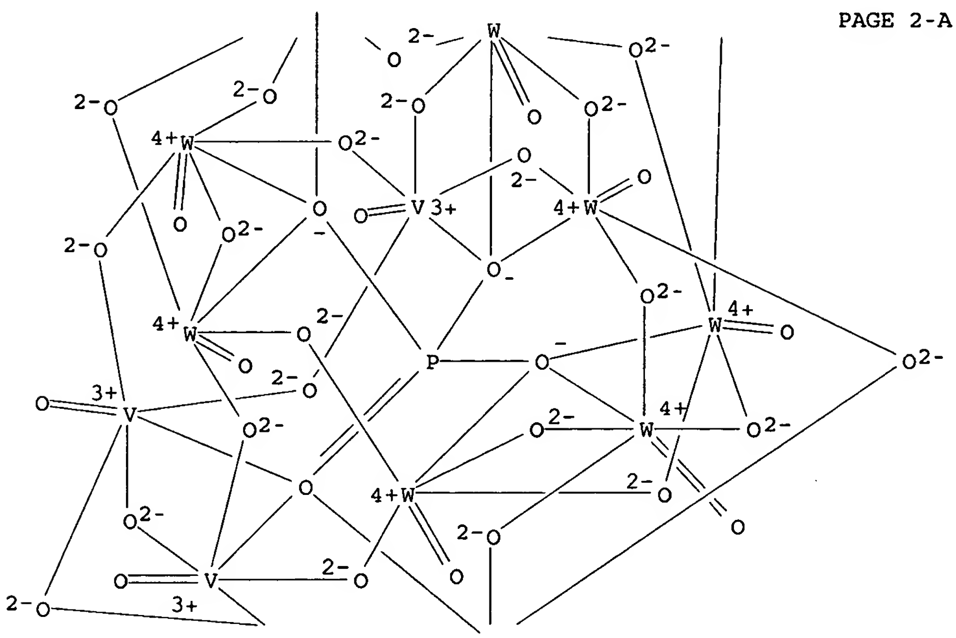


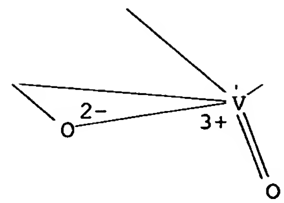
●3 H+

RN 11074-20-7 HCAPLUS
CN Vanadate(7-), (dodeca-μ-oxooctaoxooctatungstate)dodeca-μ-oxotetraoxo[μ12-[phosphato(3-)-κO:κO:κO:.kapp a.O':κO':κO':κO'':κO'':κO'':κO ''':κO''':κO''']]tetra-, heptahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





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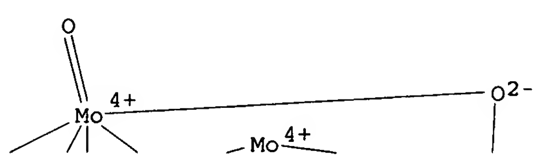
● 7 H^+

RN 12026-57-2 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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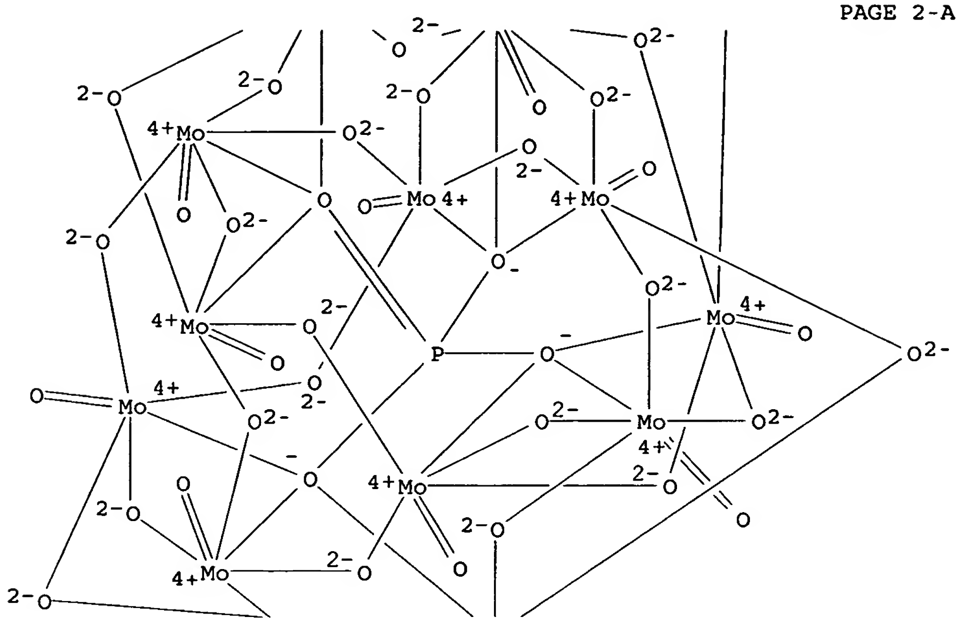

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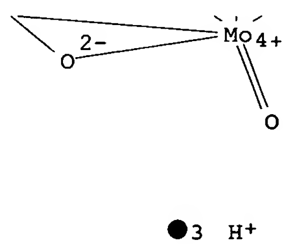
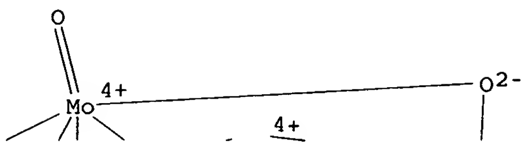


RN 12027-12-2 HCAPLUS
CN Molybdate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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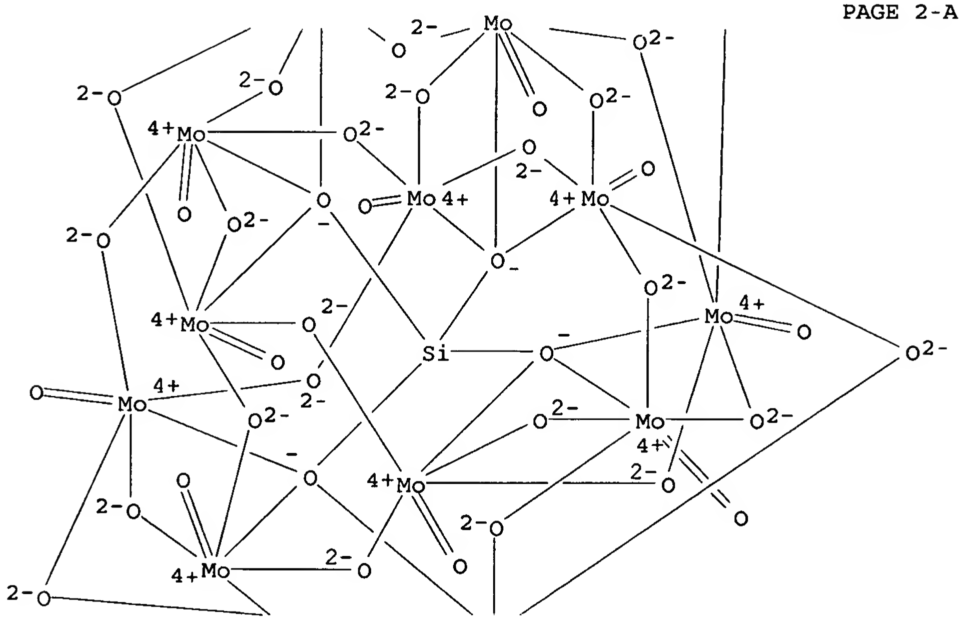

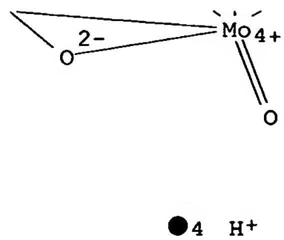

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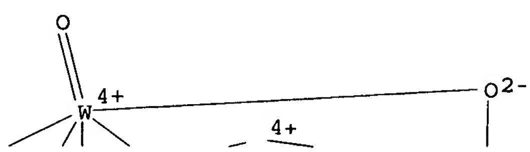
RN 12027-38-2 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]tetra
cosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX
NAME)

PAGE 1-A



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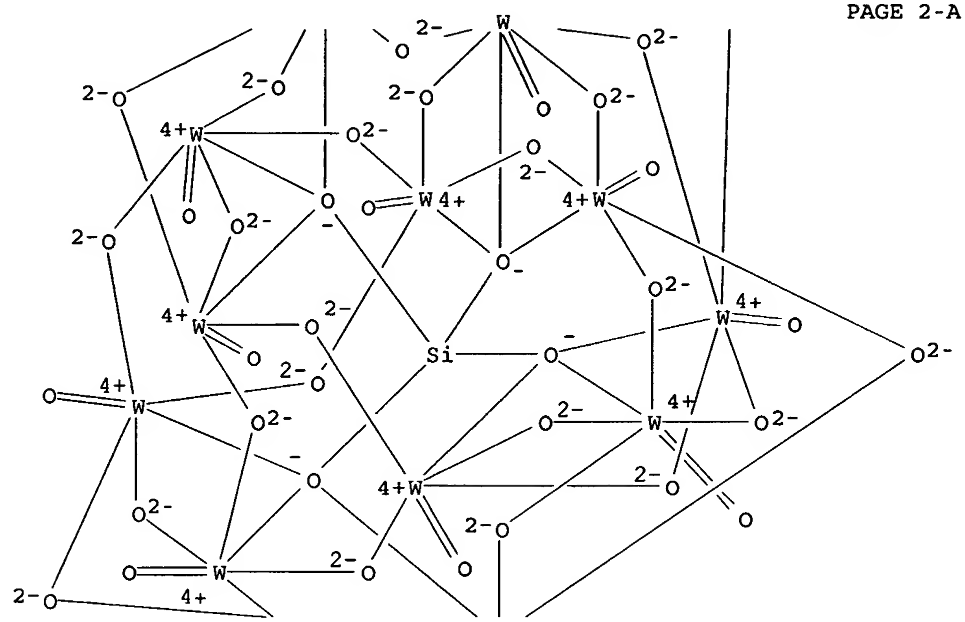

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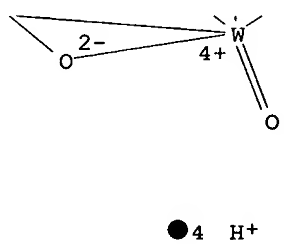
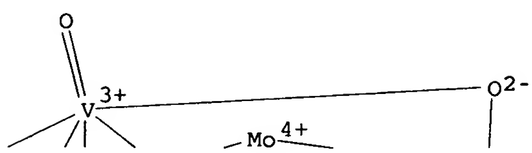


RN 12293-15-1 HCAPLUS
CN Vanadate(4-), (eicosa-μ-oxoundecaoxoundecamolybdate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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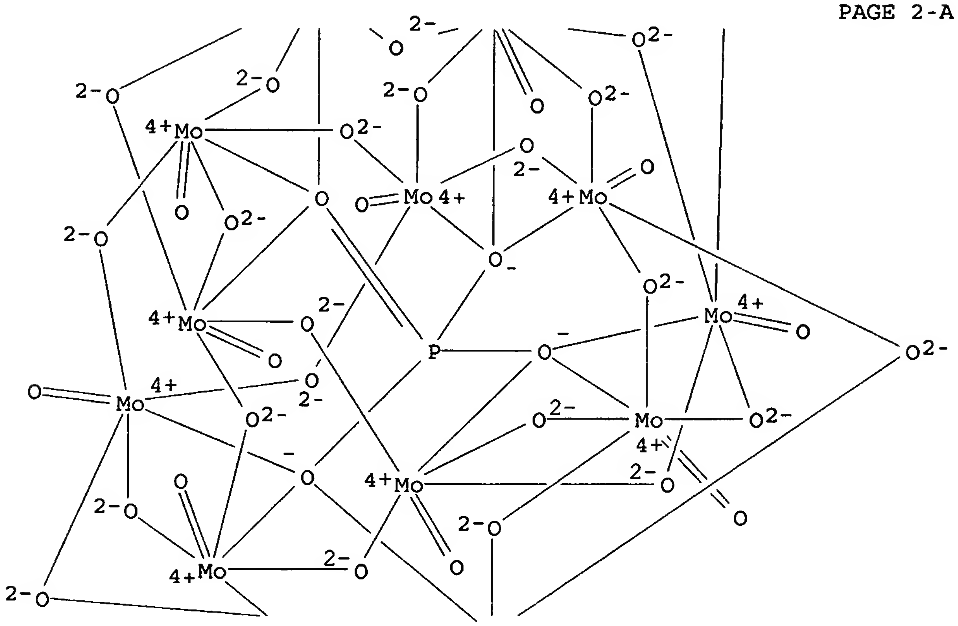

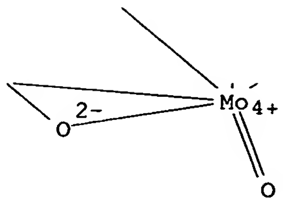

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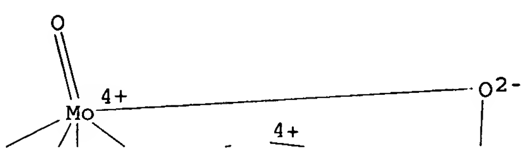
●4 H^+

RN 12293-21-9 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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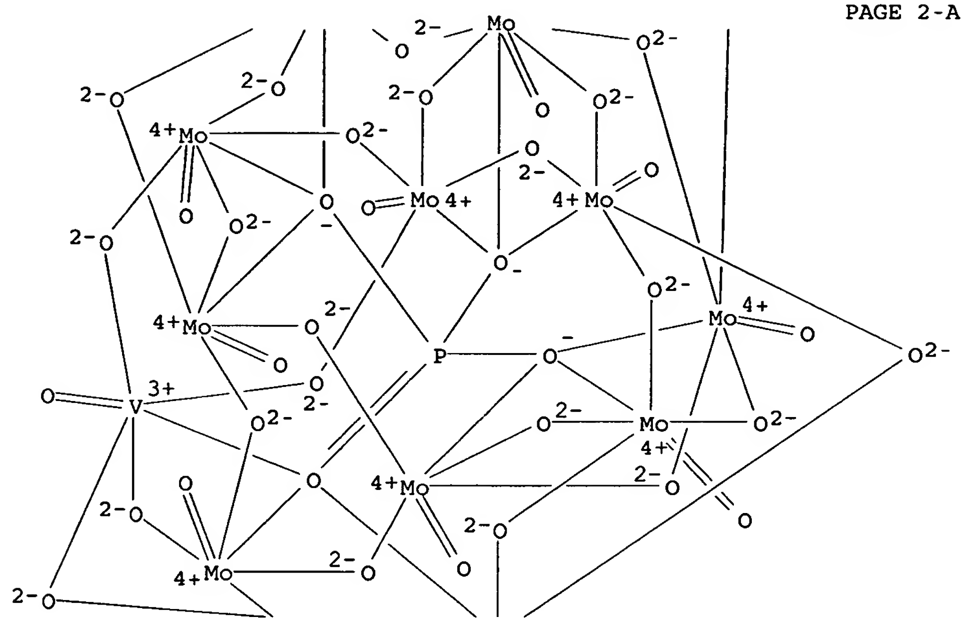
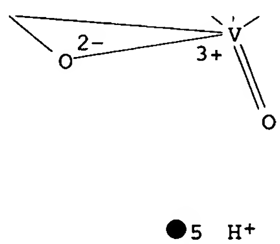


PAGE 3-A



RN 12293-24-2 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononamolybdate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexahydrogen (9CI) (CA INDEX NAME)

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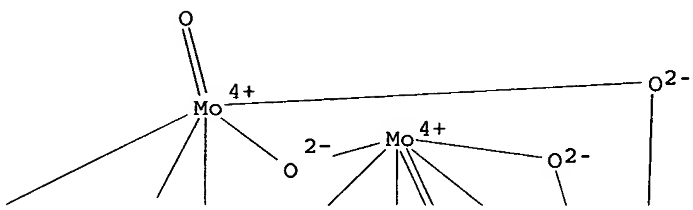

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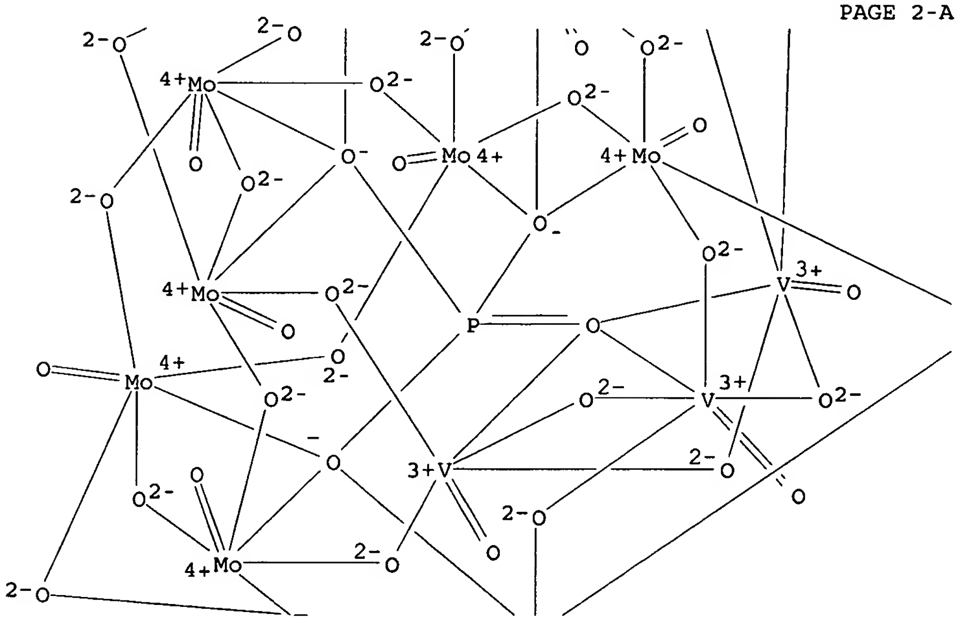

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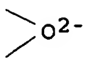

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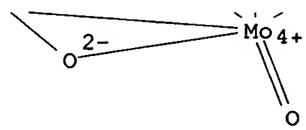
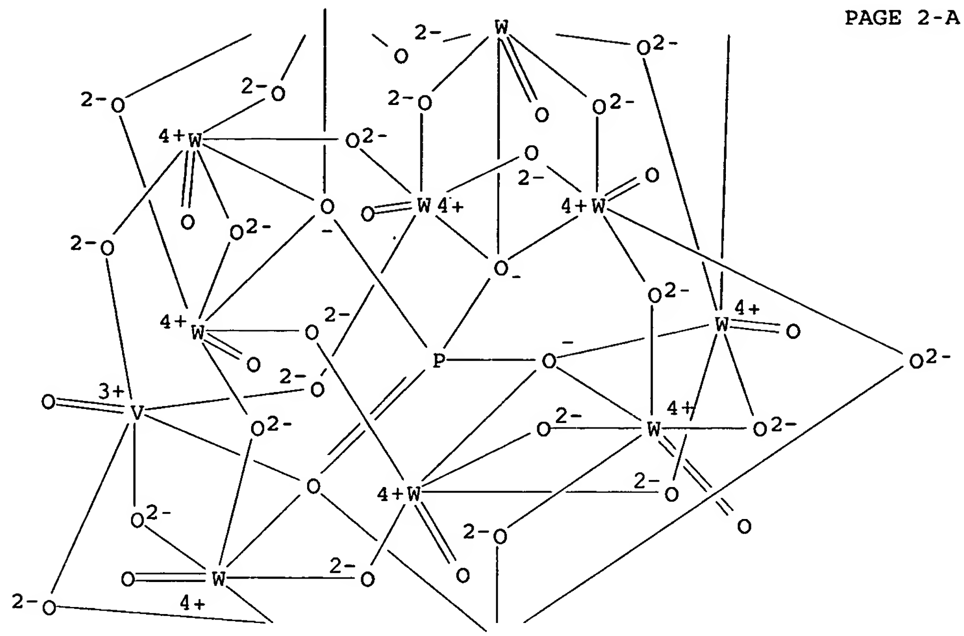


● 6 H^+

RN 12398-73-1 HCAPLUS
CN Vanadate(4-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, tetrahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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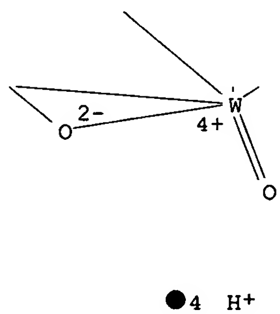
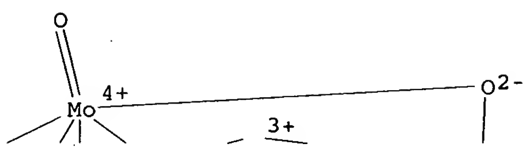
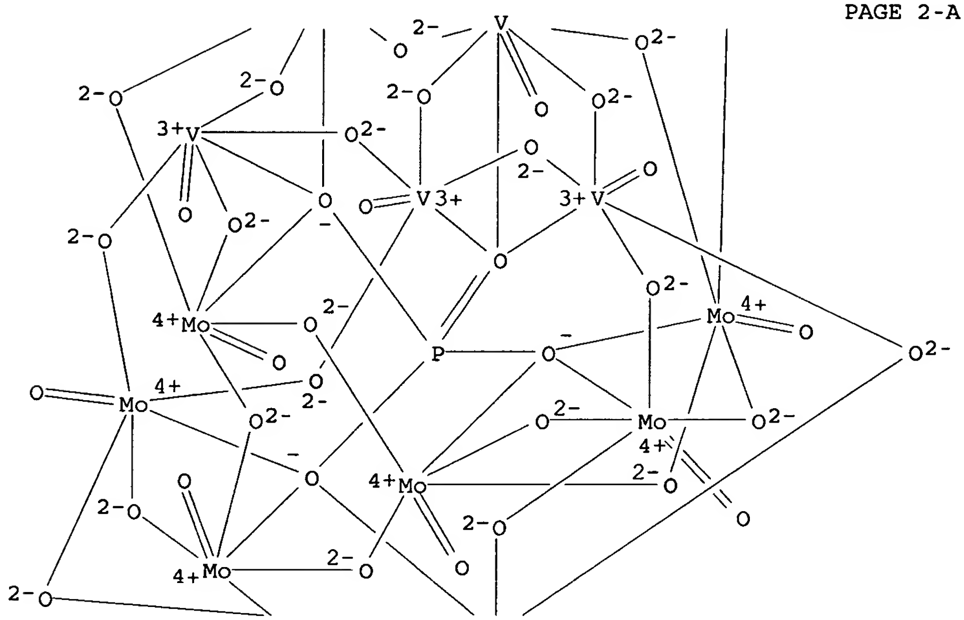


RN 54327-43-4 HCAPLUS
CN Vanadate(7-), (dodeca-μ-oxooctaoxooctamolybdate)dodeca-μ-oxotetraoxo[μ12-[phosphato(3-)-κO:κO:κO:.kapp a.O':κO':κO':κO'':κO'':κO'':κO ''':κO''':κO''']]tetra-, heptahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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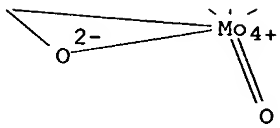


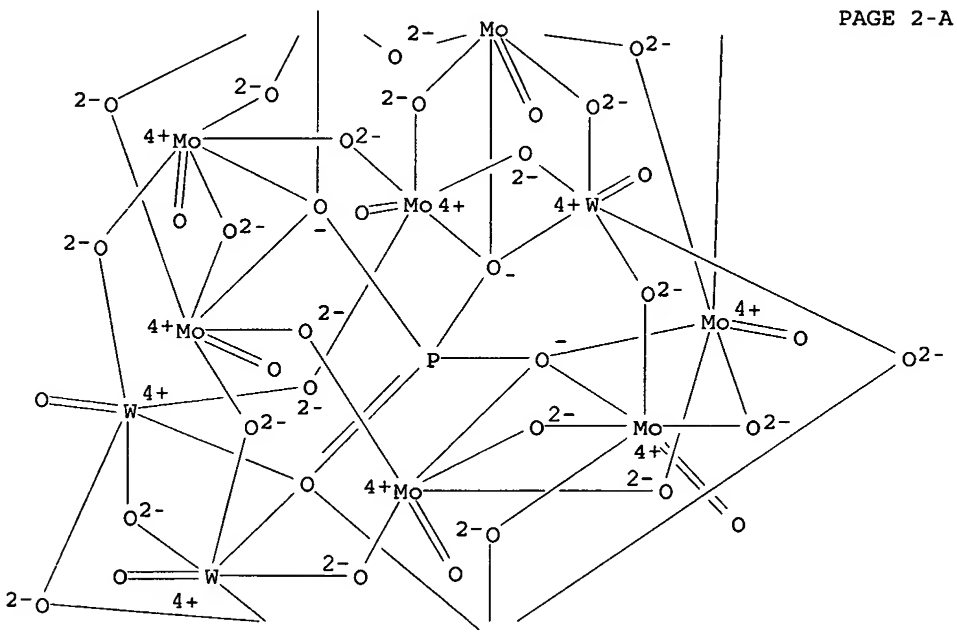
●7 H+

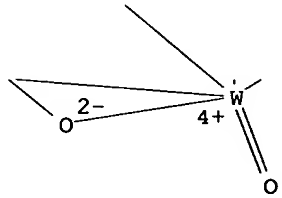
RN 92627-47-9 HCAPLUS

CN Tungstate(3-), (dodeca-μ-oxooctaoxooctamolybdate)dodeca-μ-oxotetraoxo[μ12-[phosphato(3-)-κO:κO:κO:.kapp a.O':κO':κO':κO'':κO'':κO'':κO ''':κO''':κO''']]tetra-, trihydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





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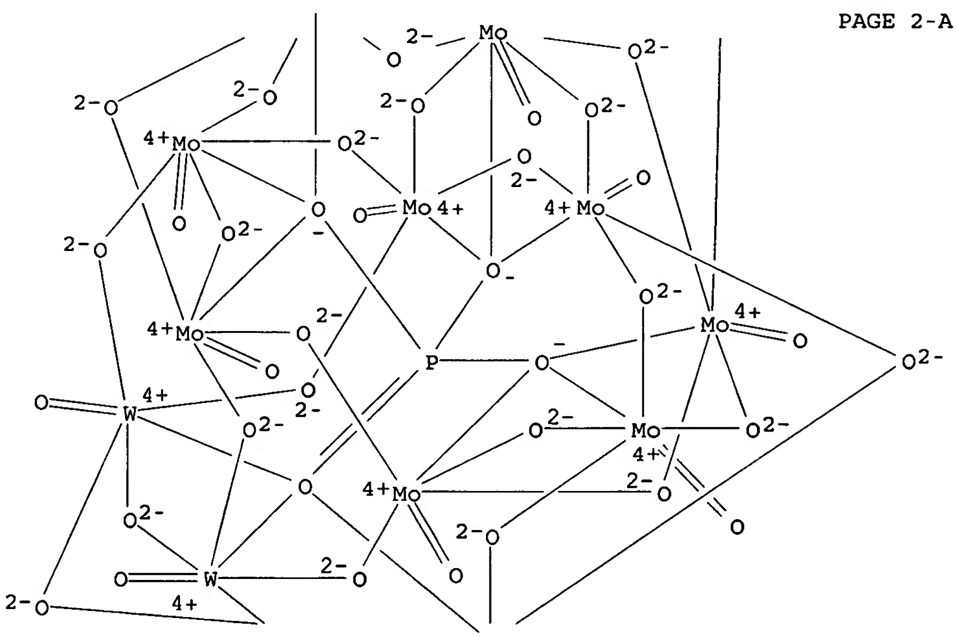
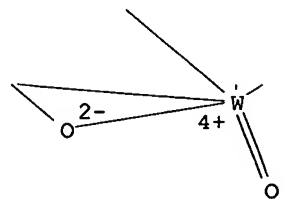
●3 H+

RN 92627-49-1 HCAPLUS
CN Tungstate(3-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononamolybdate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, trihydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A

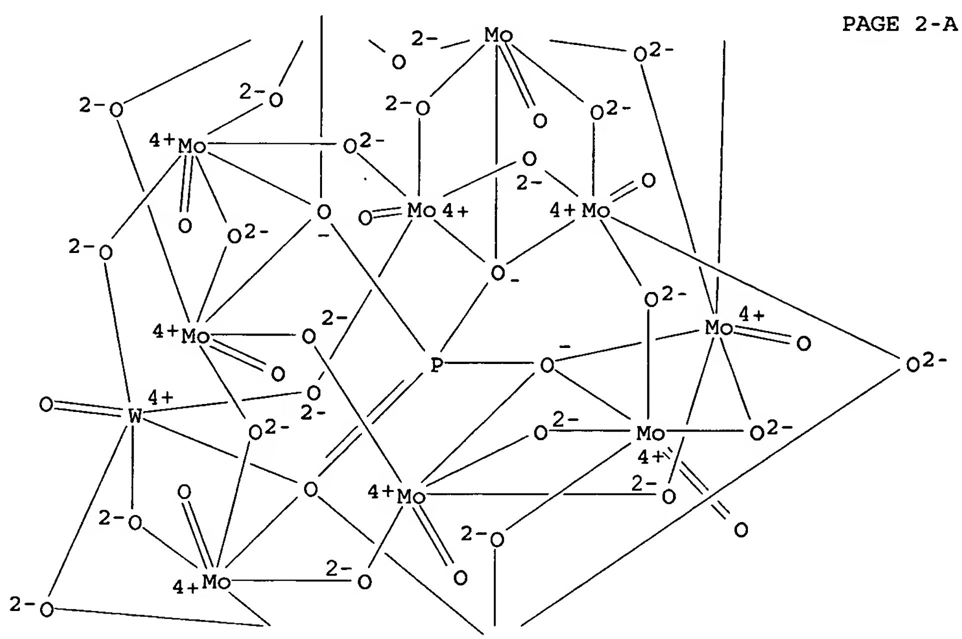


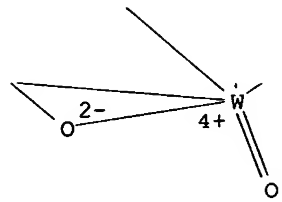


●3 H+

RN 92627-50-4 HCAPLUS
CN Tungstate(3-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, trihydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *





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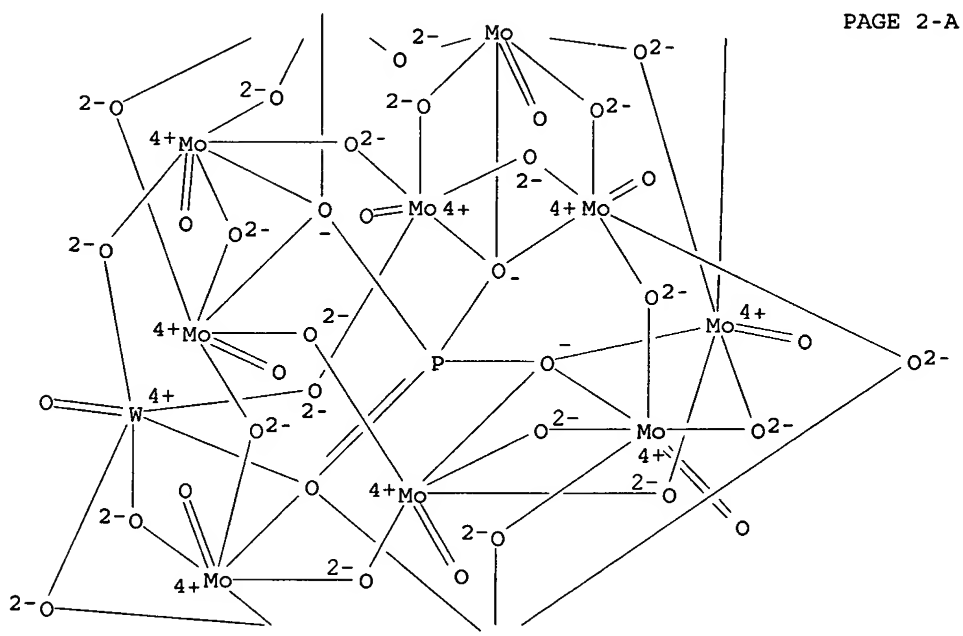
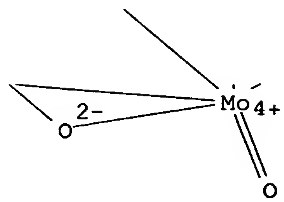
●3 H+

RN 92627-51-5 HCAPLUS
CN Tungstate(3-), (eicosa-μ-oxoundecaoxoundecamolybdate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, trihydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





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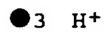
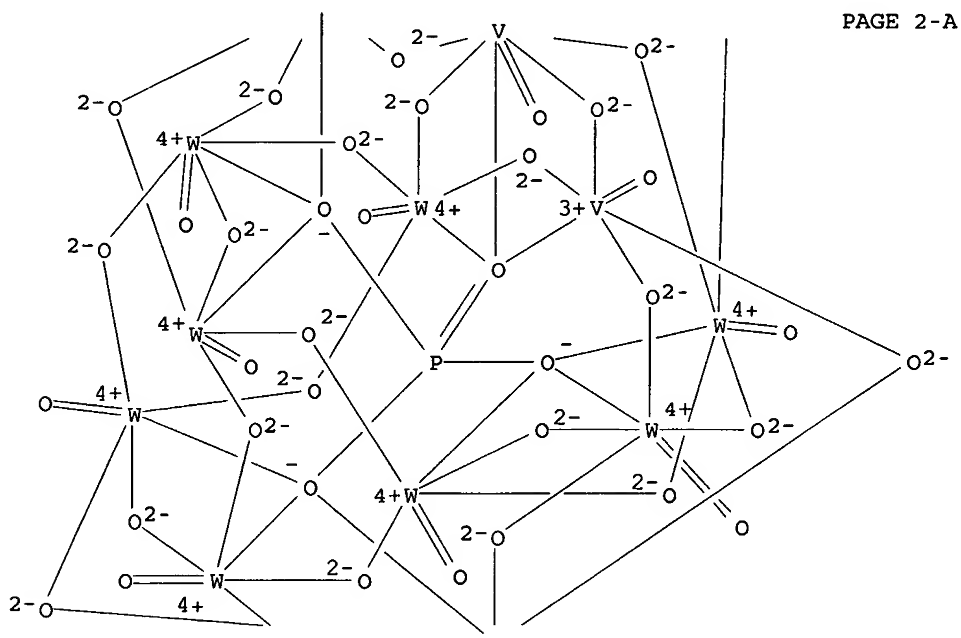
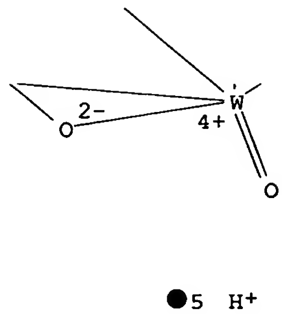


RN 174281-83-5 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





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RN 638165-41-0 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexahydrogen (9CI) (CA INDEX NAME)

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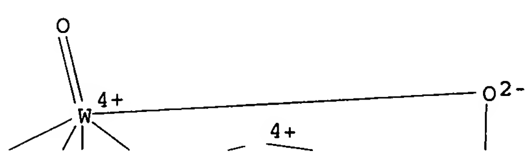

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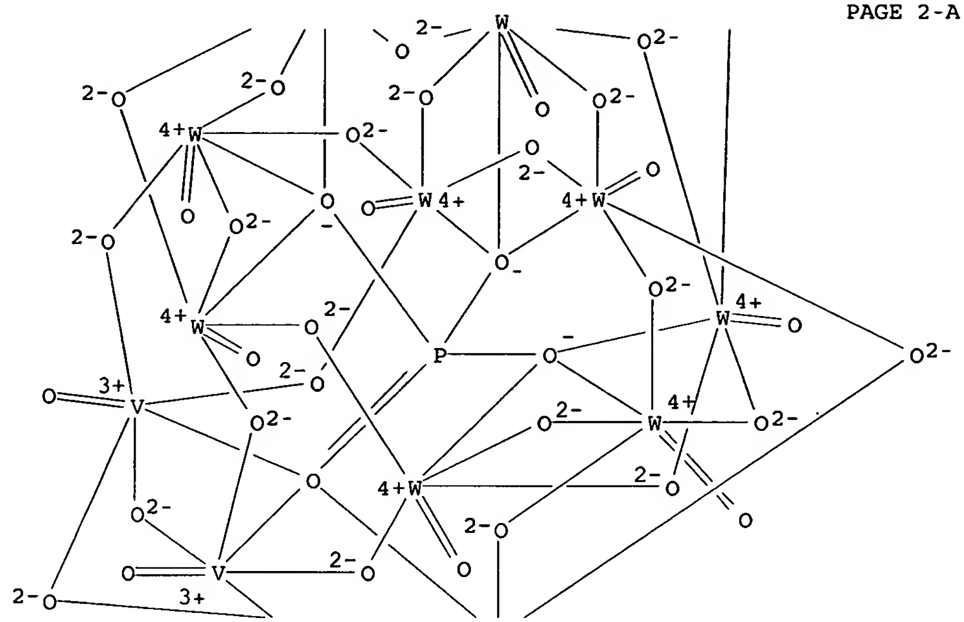

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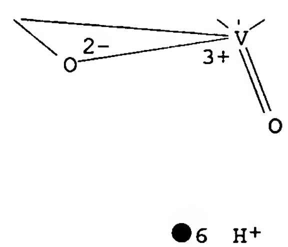

RN 638165-43-2 HCAPLUS
CN Vanadate(6-), (heptadeca-μ-oxodecaoxodecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]hepta-μ-oxodioxodi-, hexahydrogen (9CI) (CA INDEX NAME)

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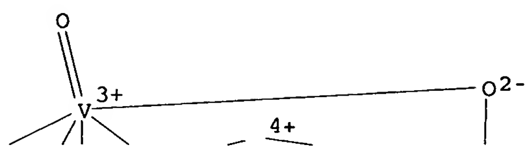

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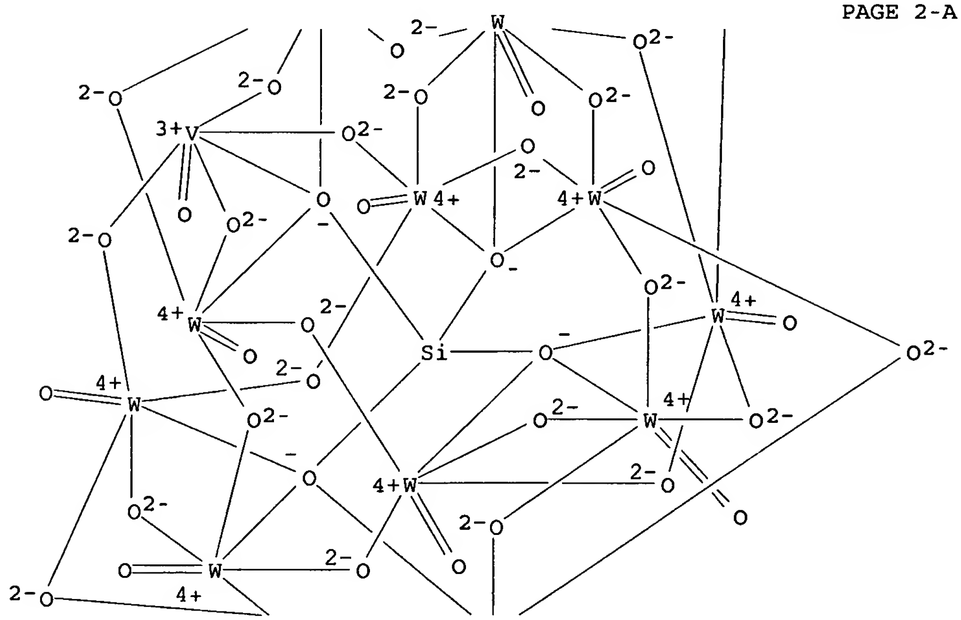

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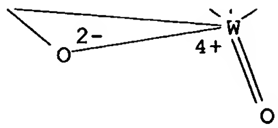

RN 638989-95-4 HCAPLUS
CN Molybdate(5-), aluminatetetracosa-μ-oxotetra-μ4-oxododecaoxododeca-, pentahydrogen (9CI) (CA INDEX NAME)

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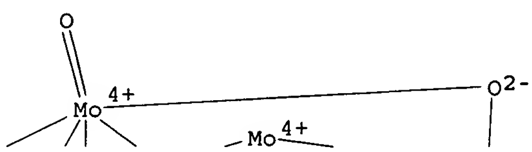

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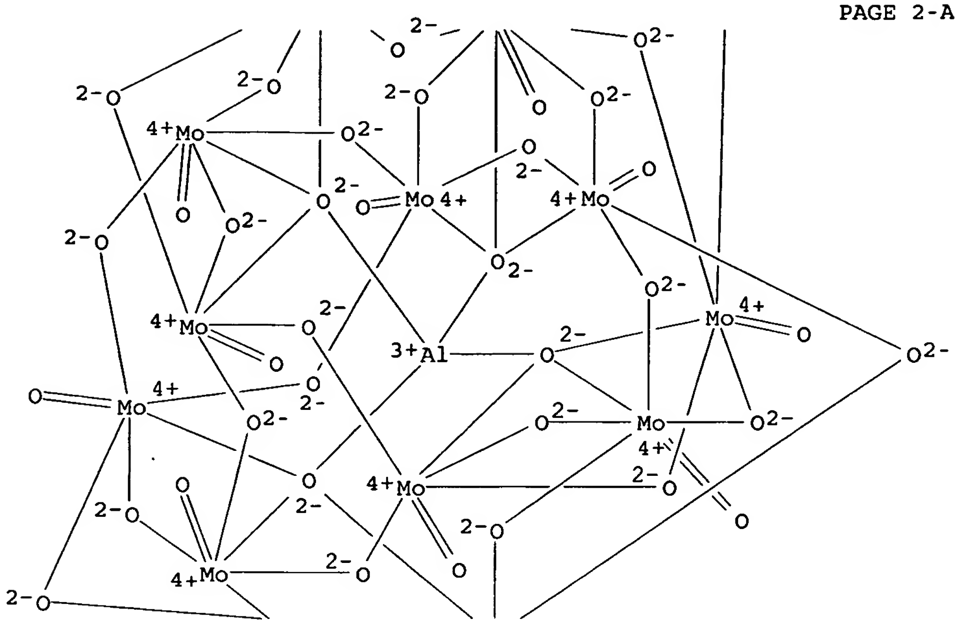

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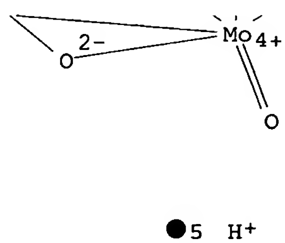

CC 78-7 (Inorganic Chemicals and Reactions)
IT **1343-93-7P**, 12-Tungstophosphoric acid **11074-20-7P**
12026-57-2P, 12-Molybdophosphoric acid **12027-12-2P**
, 12-Molybdosilicic acid **12027-38-2P**, 12-Tungstosilicic
acid 12207-90-8P **12293-15-1P** **12293-21-9P**
12293-24-2P **12398-73-1P** **54327-43-4P**
76771-55-6P **92627-47-9P** **92627-49-1P**
92627-50-4P **92627-51-5P** **174281-83-5P**
638165-41-0P 638165-42-1P **638165-43-2P**
638989-95-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation via mechanochem. activation.)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 25 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:236094 HCAPLUS
DOCUMENT NUMBER: 139:89622
TITLE: **Polyoxometalates** on cationic silica
Highly selective and efficient O2/air-based oxidation of 2-chloroethyl ethyl sulfide at ambient temperature
AUTHOR(S): **Okun, Nelya M.**; Anderson, Travis M.;

Hill, Craig L.
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Journal of Molecular Catalysis A: Chemical (2003), 197(1-2), 283-290
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Binary cupric nitrate and triflate systems catalyze the homogeneous air oxidation of the mustard (HD) simulant 2-chloroethyl Et sulfide (CEES) to the corresponding desired sulfoxide (CEESO) with effectively quant. selectivity in acetonitrile under ambient conditions. This activity is enhanced when cationic silica nanoparticles coated with the anionic multi-iron **polyoxometalates** (POMs) are also present. The POM-coated nanoparticles are prepared by treatment of aqueous suspensions of Bindzil CAT cationic silica nanoparticles (from Akzo Nobel) with aqueous solns. of the POMs, K9[(FeIII(OH2)2)3(PW9O34)2] (K94) or Na12[(FeOH2)2Fe2(P2W15O56)2] (Na125).
CC 60-4 (Waste Treatment and Disposal)
ST **polyoxometalate** cationic silica aerobic oxidn chloroethyl Et sulfide; hazardous waste **polyoxometalate** cationic silica oxidn chloroethyl Et sulfide; catalytic oxidn mustard simulant hazardous waste **polyoxometalate** cationic silica
IT Heteropoly acids
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)
(**polyoxometalates** on cationic silica for highly selective and efficient aerobic oxidation of 2-chloroethyl Et sulfide at ambient temperature)
IT Hazardous wastes
(treatment; **polyoxometalates** on cationic silica for highly selective and efficient aerobic oxidation of 2-chloroethyl Et sulfide at ambient temperature in relation to)
IT 173358-70-8, Bindzil CAT
RL: CAT (Catalyst use); USES (Uses)
(cationic silica nanoparticles; **polyoxometalates** on cationic silica for highly selective and efficient aerobic oxidation of 2-chloroethyl Et sulfide at ambient temperature)
IT 3251-23-8, Cupric nitrate 34946-82-2, Cupric triflate
RL: CAT (Catalyst use); USES (Uses)
(**polyoxometalates** on cationic silica for highly selective and efficient aerobic oxidation of 2-chloroethyl Et sulfide at ambient temperature)
IT 130002-64-1 554449-60-4
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)
(**polyoxometalates** on cationic silica for highly selective and efficient aerobic oxidation of 2-chloroethyl Et sulfide at ambient temperature)
IT 693-07-2, 2-Chloroethyl ethyl sulfide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); PROC (Process)
(**polyoxometalates** on cationic silica for highly selective and efficient aerobic oxidation of 2-chloroethyl Et sulfide at ambient temperature)
IT 27998-62-5, 2-Chloroethyl ethyl sulfoxide
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(**polyoxometalates** on cationic silica for highly selective and efficient aerobic oxidation of 2-chloroethyl Et sulfide at ambient temperature)
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L114 ANSWER 26 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:135764 HCAPLUS
DOCUMENT NUMBER: 138:261154
TITLE: [(FeIII(OH2)2)3(A-α-PW9O34)2]9- on Cationic Silica Nanoparticles, a New Type of Material and Efficient Heterogeneous Catalyst for Aerobic Oxidations
AUTHOR(S): **Okun, Nelya M.**; Anderson, Travis M.; **Hill, Craig L.**
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Journal of the American Chemical Society (2003), 125(11), 3194-3195
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Polyoxometalates** (POMs) electrostatically bind to silica nanoparticles coated with cationic aluminum oxide "(Si/AlO2)n+" to form a new type of material (the anionic POMs replace Cl- counterions associated with the cationic surface sites). Association of a new .apprx.D3h POM of formula [(FeIII(OH2)2)3(A-α-PW9O34)2]9- (1) with the cationic nanoparticles (to form "K81/(Si/AlO2)") was studied in detail. Elemental anal., particle sizes from both laser light scattering and TEM before and after association of 1, the size of 1 from X-ray crystallog., and other methods provide mutually consistent data that indicate about 58 K8[(FeIII(OH2)2)3(A-α-PW9O34)2]- monoanions associate with the average nanoparticle (diameter of the K81/(Si/AlO2) product = .apprx.17 nm). While heterogeneity of the cationic sites and roughness of the (Si/AlO2)n+ surfaces make the associated POMs structurally nonuniform, the equivalent of .apprx.1 monolayer of 1 is present in K81/(Si/AlO2). Remarkably, while 1, the precursor (Si/AlO2)n+, and the components of 1, each alone, are inactive as catalysts for O2/air-based oxidation of sulfides or aldehydes in solution, K81/(Si/AlO2) is an active catalyst for both reactions (facile reaction with air at low temperature).

CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 23, 27

ST **polyoxometalate** cationic silica nanoparticle heterogeneous catalyst aerobic oxidn; sulfide oxidn **polyoxometalate** cationic silica nanoparticle heterogeneous catalyst; aldehyde oxidn **polyoxometalate** cationic silica nanoparticle heterogeneous catalyst

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 27 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:957716 HCAPLUS
DOCUMENT NUMBER: 138:229150
TITLE: Sonochemical preparation of photochromic nanocomposite thin film based on **polyoxometalates** well dispersed in polyacrylamide
AUTHOR(S): Feng, Wei; Zhang, Tie Rui; Liu, Yan; Lu, Ran; Zhao, Ying Ying; Li, Tie Jin; Yao, Jian Nian
CORPORATE SOURCE: Department of Chemistry, Jilin University, Chang Chun, 130023, Peop. Rep. China
SOURCE: Journal of Solid State Chemistry (2002), 169(1), 1-5
CODEN: JSSCBI; ISSN: 0022-4596

PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Novel photochromic nanocomposite thin film containing phosphotungstic acid entrapped in polyacrylamide was prepared using ultrasound technique. TEM image revealed that the **polyoxometalates** nanoparticles with narrow size distribution were finely dispersed in polymer matrix. IR spectra showed that the Keggin geometry of **polyoxometalates** was still preserved inside the **composite** film and strong Coulombic interaction was built between heteropolyoxometalates and polyacrylamide via hydrogen bond. It was found that the thermal stability of the hybrid film was lower than that of **pure** polymer but the film was stable enough for photochromic application from the TG-DTA curves. The transparent film changed from colorless to blue under UV irradiation and showed reversible photochromism. The bleaching process occurred when the film was in contact with air or O2 in the dark. The photoreduced process was in accordance with radical mechanism.

IT **12534-78-0**
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(sonochem. preparation of photochromic nanocomposite thin film based on **polyoxometalates** dispersed in polyacrylamide)

RN 12534-78-0 HCAPLUS

CN Tungstate(4-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **1343-93-7**, Phosphotungstic acid
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(sonochem. preparation of photochromic nanocomposite thin film based on **polyoxometalates** dispersed in polyacrylamide)

RN 1343-93-7 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

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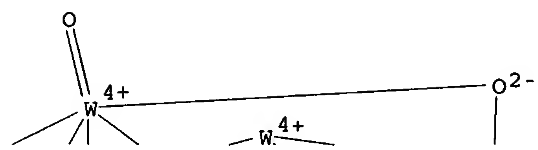

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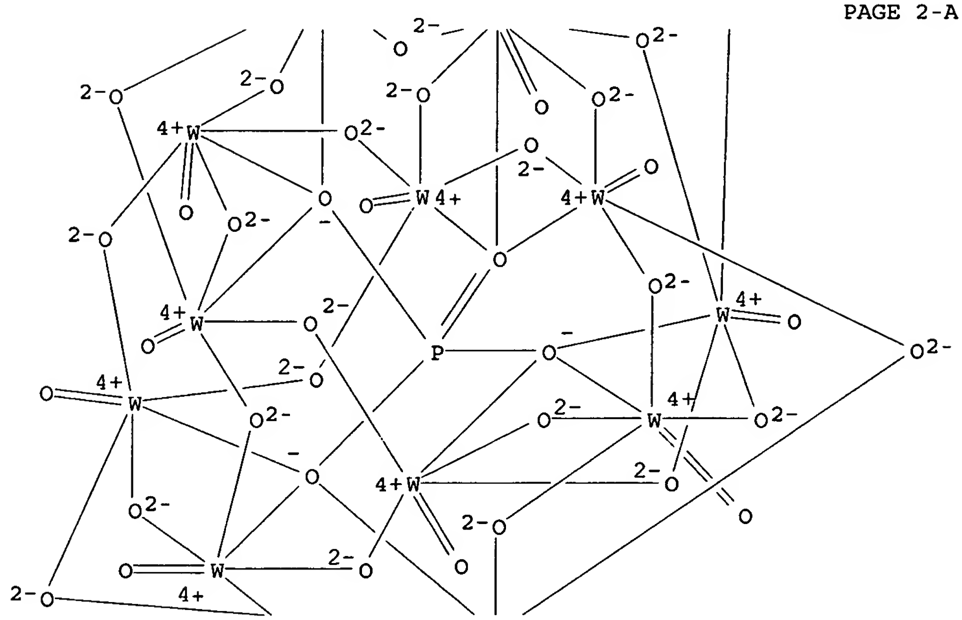

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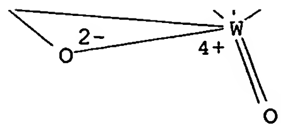


●3 H+

CC 74-9 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT Sound and Ultrasound
(preparation of photochromic nanocomposite thin film based on **polyoxometalate** and polyacrylamide using)
IT Hydrogen bond
Nanocomposites
Photochromic materials
(sonochem. preparation of photochromic nanocomposite thin film based on **polyoxometalates** dispersed in polyacrylamide)
IT **12534-78-0**
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(sonochem. preparation of photochromic nanocomposite thin film based on **polyoxometalates** dispersed in polyacrylamide)
IT **1343-93-7**, Phosphotungstic acid 9003-05-8, Polyacrylamide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(sonochem. preparation of photochromic nanocomposite thin film based on **polyoxometalates** dispersed in polyacrylamide)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 28 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:916776 HCAPLUS
DOCUMENT NUMBER: 138:323871
TITLE: A novel application of **mixed**-valence Keggin-type **polyoxometalates** as non-aqueous electrolytes in polyacenic semiconductor secondary batteries
AUTHOR(S): Wang, Xiuli; Wang, Enbo; Xie, Demin; Zhang, Xiyan; Hu, Changwen; Xu, Lin
CORPORATE SOURCE: Institute of Polyoxometalate Chemistry, Department of Chemistry, Northeast Normal University, Changchun, 130024, Peop. Rep. China
SOURCE: Solid State Ionics (2003), 156(1,2), 71-78
CODEN: SSIOD3; ISSN: 0167-2738
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Mixed**-valence Keggin-type lithium **polyoxometalates** (POMs) were used as the electrolytes of polyacenic semiconductor (PAS) secondary batteries substituting for LiClO4 for the first time. The discharging, cycle and self-discharging properties of these PAS/Li secondary batteries and the effect of c.d. and temperature on the properties of the batteries have been investigated. The results indicate not only that the lithium POMs can overcome the disadvantages of LiClO4,

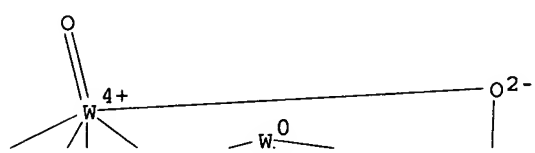
which is apt to **explode** when heated or rammed, but also that some of the PAS/Li secondary batteries assembled with the novel electrolytes have larger capacity and smaller self-discharging than that assembled with LiClO4. Therefore, it is believed that Keggin-type **mixed**-valence lithium POMs are novel and better electrolytes of PAS secondary batteries and exhibit promising practical application.

IT **514202-37-0 514202-38-1 514202-49-4**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrolytes; novel application of **mixed**-valence Keggin-type **polyoxometalates** as non-aqueous electrolytes in polyacenic semiconductor secondary batteries)

RN 514202-37-0 HCAPLUS

CN Tungstate(7-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]dodeca-, heptalithium (9CI) (CA INDEX NAME)

PAGE 1-A



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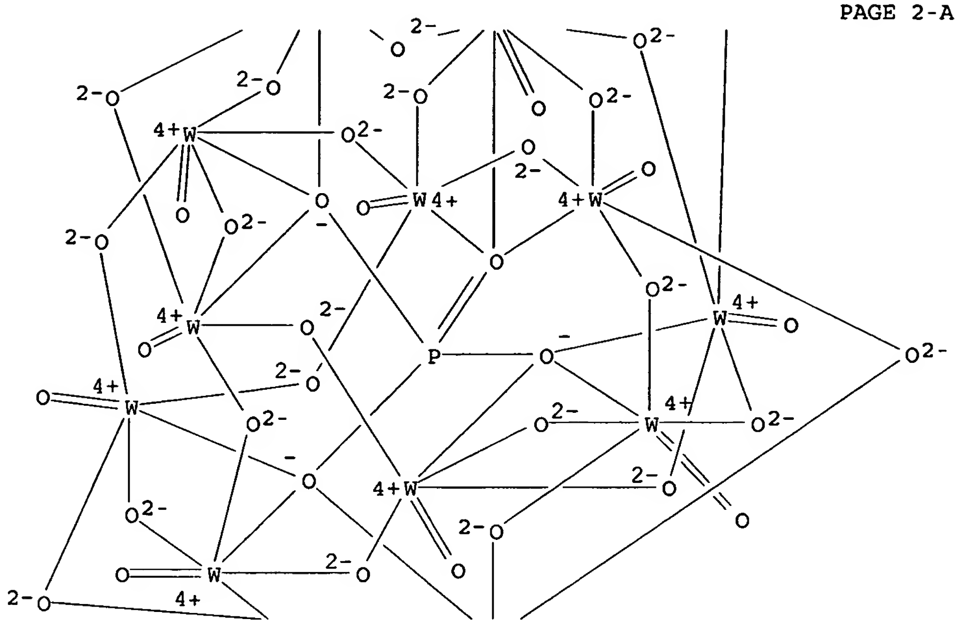

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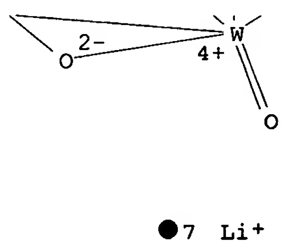
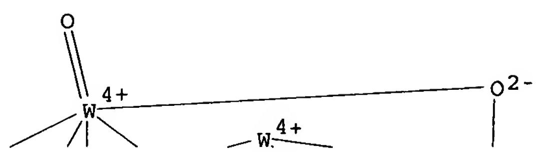


RN 514202-38-1 HCAPLUS
CN Tungstate(6-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, hexalithium (9CI) (CA INDEX NAME)

PAGE 1-A



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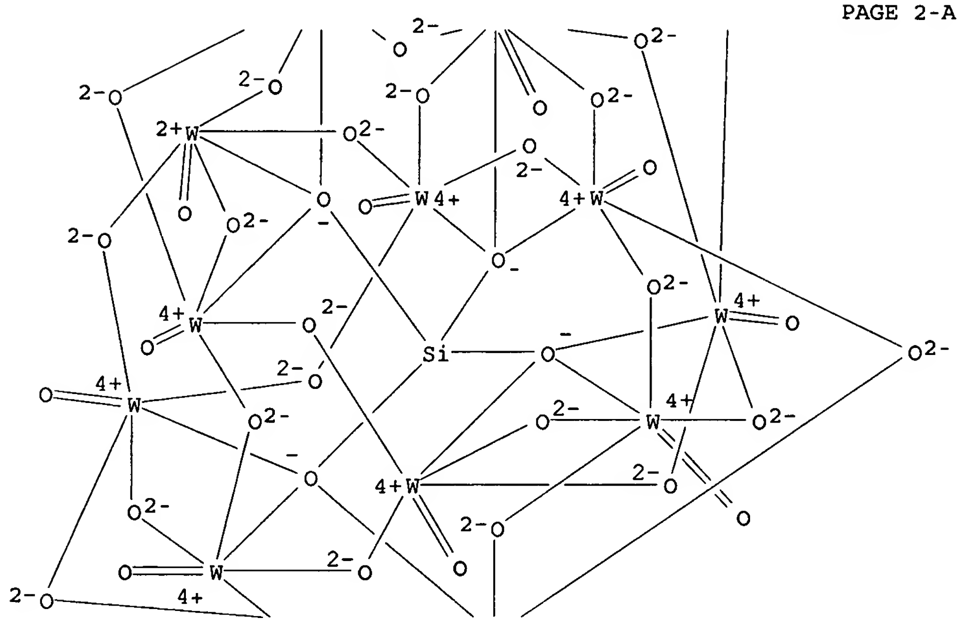

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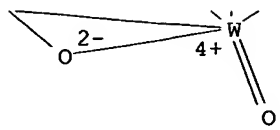
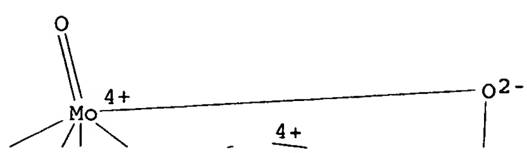


● 6 Li^+

RN 514202-49-4 HCAPLUS
CN Molybdate(6-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, hexalithium (9CI) (CA INDEX NAME)

PAGE 1-A



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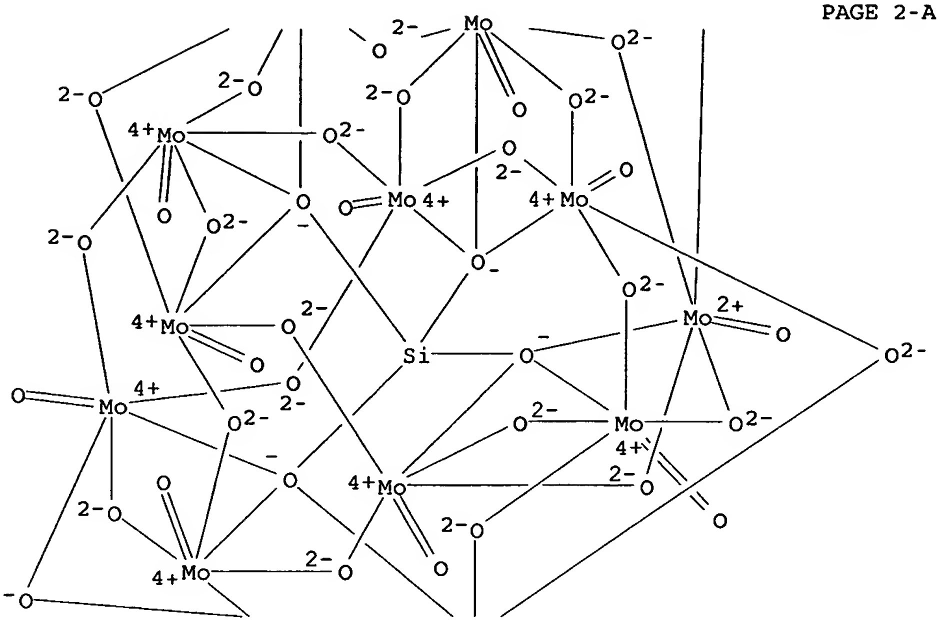

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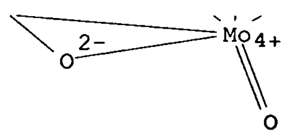

● 6 Li^+

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Secondary batteries
(lithium; novel application of **mixed**-valence Keggin-type **polyoxometalates** as non-aqueous electrolytes in polyacenic semiconductor secondary batteries)

IT Battery electrolytes
(novel application of **mixed**-valence Keggin-type **polyoxometalates** as non-aqueous electrolytes in polyacenic semiconductor secondary batteries)

IT Heteropoly acids
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(novel application of **mixed**-valence Keggin-type **polyoxometalates** as non-aqueous electrolytes in polyacenic semiconductor secondary batteries)

IT **514202-37-0 514202-38-1 514202-49-4**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrolytes; novel application of **mixed**-valence Keggin-type **polyoxometalates** as non-aqueous electrolytes in polyacenic semiconductor secondary batteries)

IT 514202-39-2, Lithium molybdenum oxide phosphate (Li5Mo12O36(PO4))
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(novel application of **mixed**-valence Keggin-type **polyoxometalates** as non-aqueous electrolytes in polyacenic semiconductor secondary batteries)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 29 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:168805 HCAPLUS
DOCUMENT NUMBER: 137:95992
TITLE: Isomerization of n-Hexane over Silica-Supported Heteropoly Acids Promoted by the Reduced Ce-Ni Oxides
AUTHOR(S): Kuang, Wenxing; Rives, Alain; Ben Tayeb, Bouchta Ouled; Fournier, Michel; Hubaut, Robert
CORPORATE SOURCE: Laboratoire de Catalyse Heterogene et Homogene, UPRESA 8010, Universite des Sciences et Technologies de Lille, Villeneuve d'Ascq, 59655, Fr.
SOURCE: Journal of Colloid and Interface Science (2002), 248(1), 123-129
CODEN: JCISA5; ISSN: 0021-9797
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The structure and catalytic properties of silica-supported heteropoly acids promoted by the reduced Ce-Ni oxides are 1st studied by using chemical anal. XRD, FT-Raman, XPS, EPR, TG, surface area measurements, and microreactor test. Silica-supported heteropoly acids have isomerization activity, but are very easy to deactivate by coke deposition. With the promotion of the reduced Ce-Ni oxides, however, the better activity and the higher selectivity to isomers could be obtained, suggesting that the reduced Ce-Ni oxides really have hydrogenating/dehydrogenating functions. Also, the presence of the reduced Ce-Ni oxides is not only beneficial for eliminating the coke deposition, but also effective for maintaining the structure of silica-supported heteropoly acids during reaction. The effect of the **compn**. of the mech. **mixts.** of silica-supported heteropoly acids and the Ce-Ni oxides on the catalytic properties was **explored.** (c) 2002 Academic Press.

IT **1343-93-7**, 12-Phosphotungstic acid **12027-38-2**, 12-Tungstosilicic acid **12297-12-0**, 12-Tungstoboric acid
RL: CAT (Catalyst use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(isomerization of n-hexane over silica-supported heteropoly acids promoted by reduced Ce-Ni oxides)

RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

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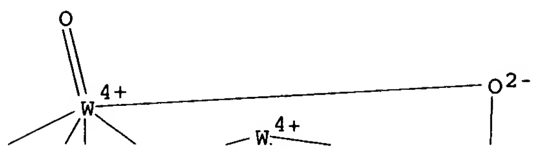

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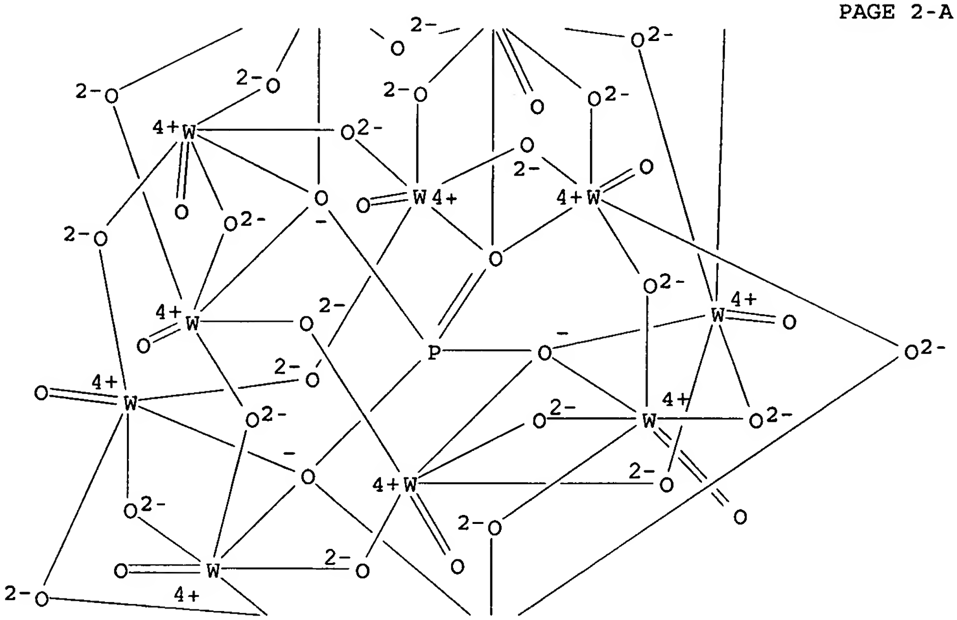

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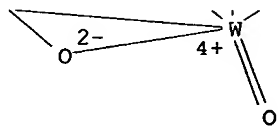

●3 H+

RN 12027-38-2 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

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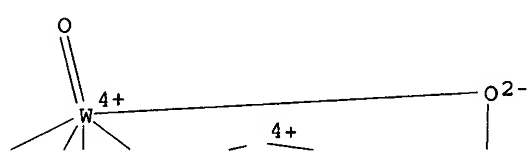

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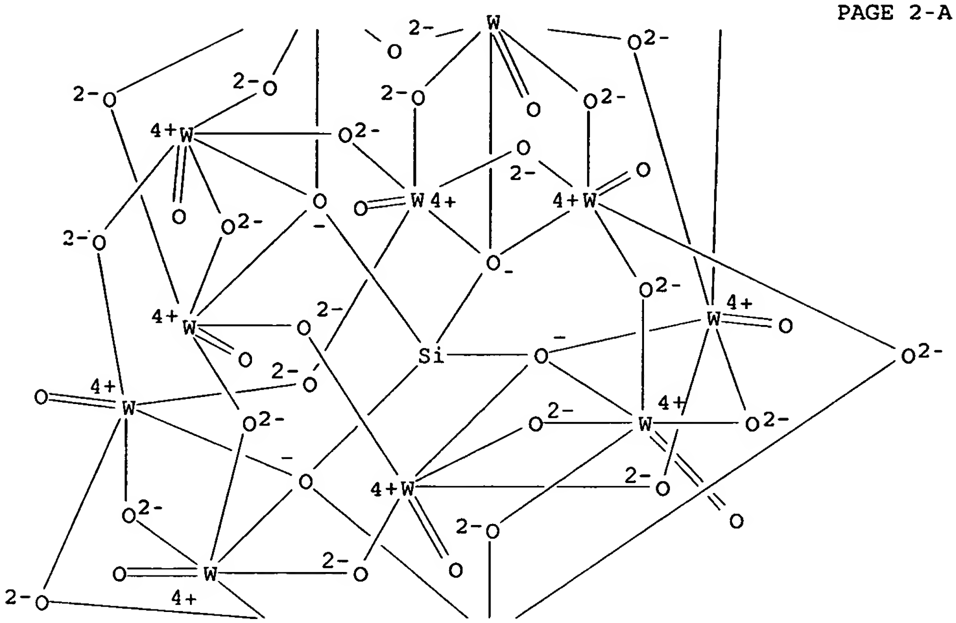

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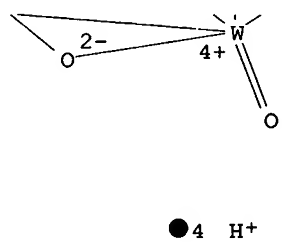

RN 12297-12-0 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]dodeca-, pentahydrogen (9CI) (CA INDEX NAME)

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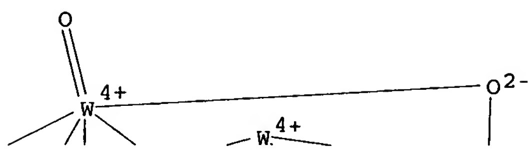

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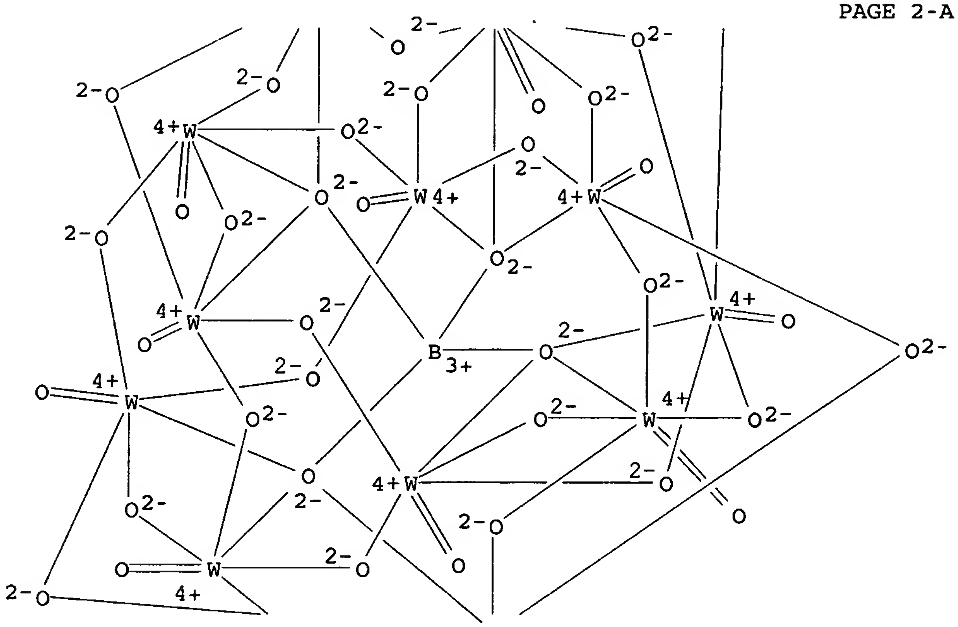

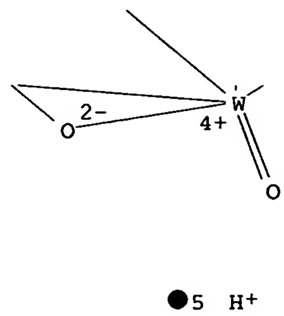

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CC 51-6 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 45, 66
IT **1343-93-7**, 12-Phosphotungstic acid **12027-38-2**, 12-Tungstosilicic acid **12297-12-0**, 12-Tungstoboric acid 134883-91-3, Cerium nickel oxide
RL: CAT (Catalyst use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(isomerization of n-hexane over silica-supported heteropoly acids promoted by reduced Ce-Ni oxides)
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 30 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:795455 HCAPLUS
DOCUMENT NUMBER: 136:95024
TITLE: Asymmetric Sandwich-Type Polyoxoanions. Synthesis, Characterization, and X-ray Crystal Structures of Diferric Complexes [TMIIFeIII2(P2W15O56)(P2TMII2W13O52)]16-, TM = Cu or Co
AUTHOR(S): Anderson, Travis M.; Hardcastle, Kenneth I.; **Okun, Nelya; Hill, Craig L.**
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Inorganic Chemistry (2001), 40(25), 6418-6425
CODEN: INOCAJ; ISSN: 0020-1669
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:95024
AB Reaction of the diferric sandwich-type **polyoxometalate** (NaOH2)2FeIII2(P2W15O56)216- (1) with excess aqueous Cu(II) or Co(II) yields a new type of d-electron-metal substituted **polyoxometalate**, [TMIIFeIII2(P2W15O56)(P2TMII2W13O52)]16-, TM = Cu (2), Co (3), resp. The structure of the Na salt of 2 (Na2), determined by single-crystal x-ray diffraction anal. (a 13.4413(9), b 21.2590(15), c 25.5207(18) Å, α 80.475(2), β 85.555(2), γ 89.563(2)°, triclinic, P.hivin.1, R1 = 5.42%, based on 43097 independent reflections), consists of a defect Fe2Cu central unit sandwiched between two different trivacant Wells-Dawson-type units, P2W15 and P2Cu2W13, where the latter unit has two octahedral Cu(II) ions substituted for two adjacent belt W(VI) atoms. The CuO5OH2 octahedron in the central unit shows pronounced Jahn-Teller distortion. A low-resolution x-ray structure of Na3 is included in the Supporting Information. UV-visible, IR, 31P NMR, cyclic voltammetric, and elemental anal. data are all consistent with the structure determined from the x-ray anal. Cyclic voltammograms of 2 and 3 exhibit multiple electron-transfer processes under ambient conditions, and Cu or Co incorporation into the framework of 1 results in a

substantial perturbation of the electrochem. properties of the polyoxotungstate framework. The Bu4N+ salts of 2 and 3 (readily prepared by metathesis) are stable and effective catalysts for the oxidation of some alkenes with high yields based on H2O2.

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 67, 72, 75

REFERENCE COUNT: 116 THERE ARE 116 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 31 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:721198 HCAPLUS
DOCUMENT NUMBER: 136:112197
TITLE: Insulin mimetic effect of a tungstate cluster. Effect of oral administration of homo-polyoxotungstates and vanadium-substituted polyoxotungstates on blood glucose level of STZ mice
AUTHOR(S): Nomiya, K.; Torii, H.; Hasegawa, T.; Nemoto, Y.; Nomura, K.; Hashino, K.; Uchida, M.; Kato, Y.; Shimizu, K.; Oda, M.
CORPORATE SOURCE: Faculty of Science, Department of Materials Science, Kanagawa University, Hiratsuka, Kanagawa, 259-1293, Japan
SOURCE: Journal of Inorganic Biochemistry (2001), 86(4), 657-667
CODEN: JIBIDJ; ISSN: 0162-0134
PUBLISHER: Elsevier Science Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

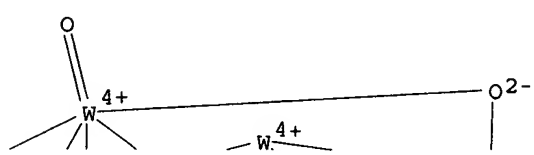
AB Aqueous vanadate and aqueous tungstate have been known to mimic all or most of the actions of insulin in intact cell systems with respect to normalization of the blood glucose level. By carrying out oral administration in vivo expts. on the blood glucose level of streptozotocin (STZ)-induced diabetes (STZ mice), the insulin-mimetic (IM) effects of metal-oxide clusters of all-inorg. **composition** were examined using many types of **polyoxometalates** (POM) with and without vanadium substitution. Several homo-POM and vanadium-substituted POM showed hypoglycemic effects. The observed hypoglycemic effects indicated that POM with the Dawson structure {[α-P2W18O62]6- (W-2), [α-P2W17VVO62]7- (V-19) and [α-1,2,3-P2W15VV3O62]9- (V-04)} are more effective than those with the Keggin structure {[α-PW12O40]3- (W-1), [α-PW11VVO40]4- (V-01), [α-1,2-PW10VV2O40]5- (V-02), [α-1,2,3-PW9VV3O40]6- (V-03) and [α-1,4,9-PW9VV3O40]6- (V-13)}. The vanadate cluster [V10O28]6- (V-15) also showed a hypoglycemic effect. 31P and 51V NMR measurements showed that the Dawson POM (W-2, V-04 and V-19) are stable in aqueous solution under the conditions used. The effect of all POM on the body weight of STZ mice was also examined The decrease in body weight after administration of W-2 was much less than for V-19, V-04 and V-15. This suggests that not only monomeric tungstate and vanadate, but also the structure factors of tungstate and vanadate clusters, can play a significant role in their biol. action.

IT **12026-98-1 12773-19-2 37234-37-0**
59519-71-0 59519-72-1 85585-36-0
93222-17-4 101144-77-8 119390-04-4
133348-27-3 133348-30-8
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(insulin mimetic effect of a tungstate cluster. effect of oral administration of homo-polyoxotungstates and vanadium-substituted polyoxotungstates on blood glucose level of STZ mice)

RN 12026-98-1 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trisodium (9CI) (CA INDEX NAME)

PAGE 1-A



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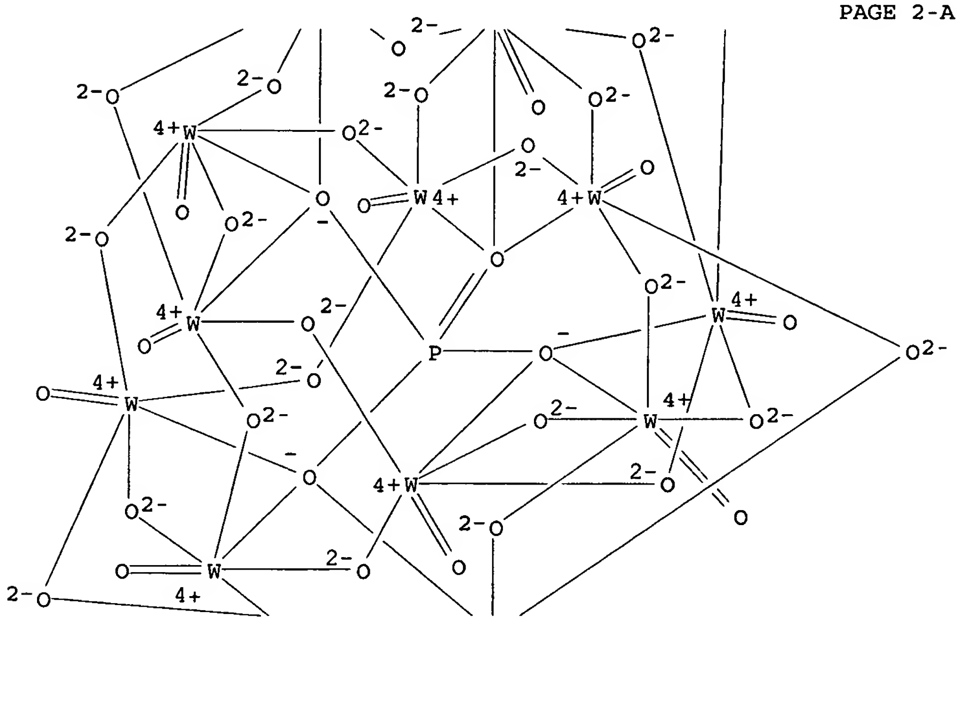

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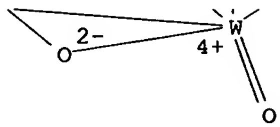

●3 Na^{+}

RN 12773-19-2 HCAPLUS
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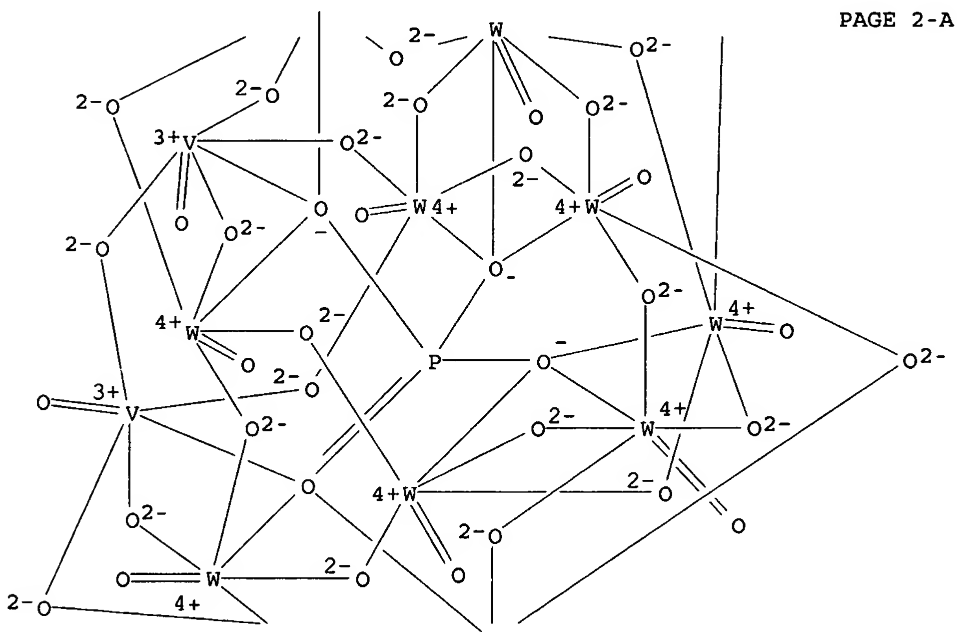
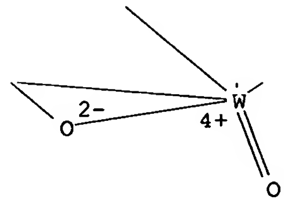
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





PAGE 3-A

● 5 K^+

RN 37234-37-0 HCAPLUS

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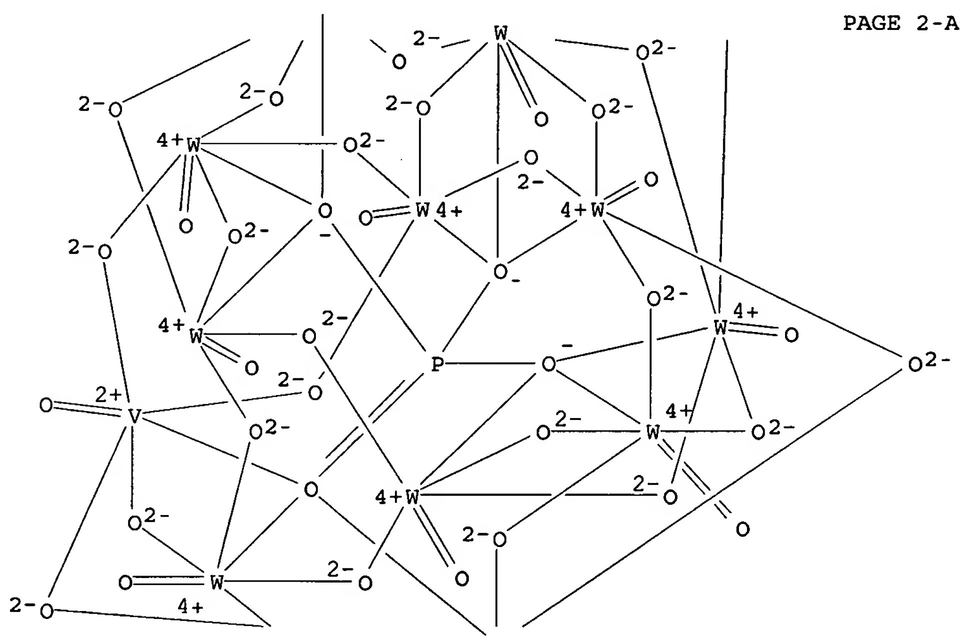
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



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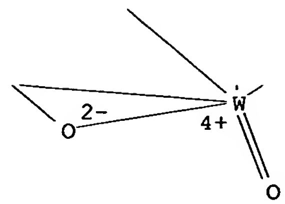
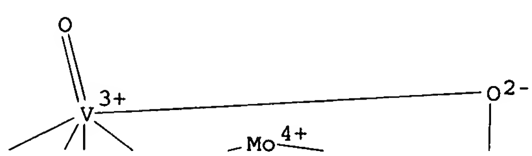


PAGE 3-A

●5 K^+

RN 59519-71-0 HCAPLUS
CN Vanadate(4-), (eicosa-μ-oxoundecaoxoundecamolybdate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, tetrapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



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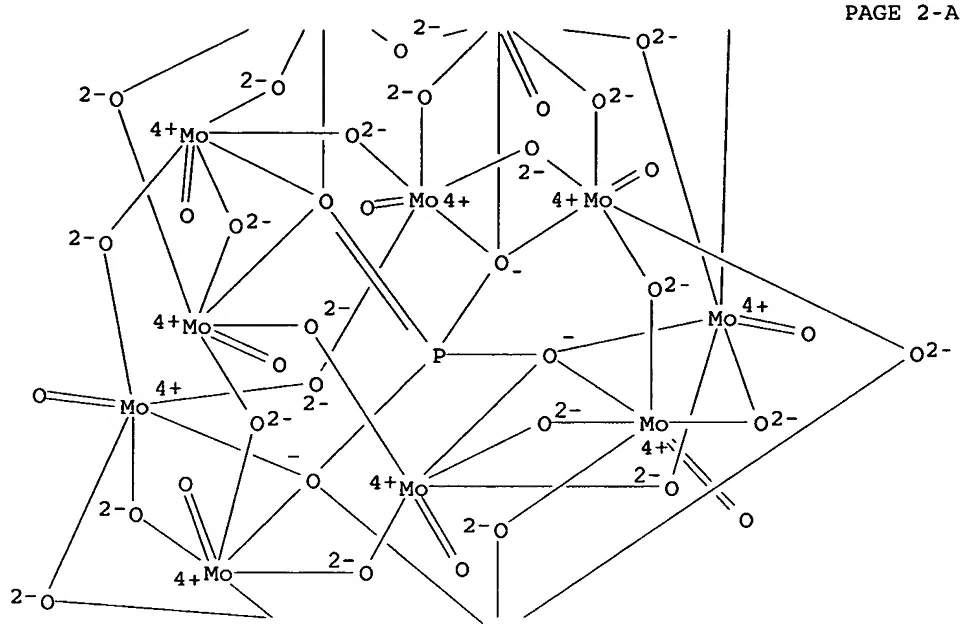

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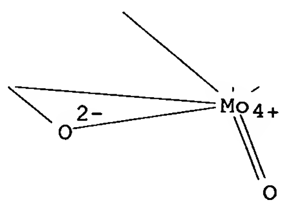

● 4 K^+

RN 59519-72-1 HCAPLUS

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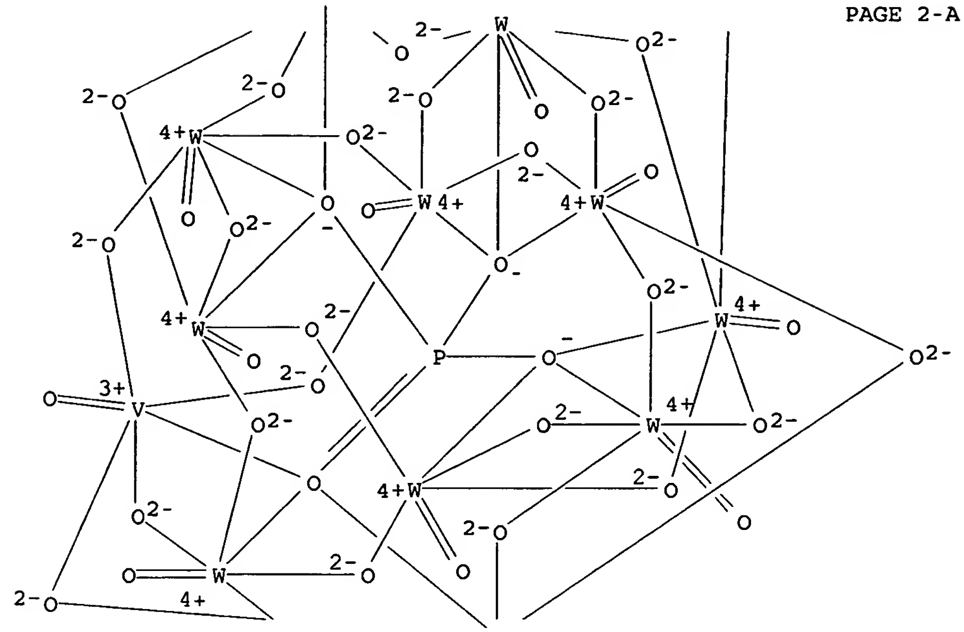
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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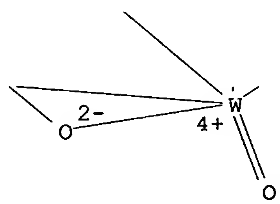

● 4 K^+

RN 85585-36-0 HCAPLUS
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.O'':κO''':κO''']]heptadecatungstate]tetra-μ-
oxooxo[μ9-[phosphato(3-)-κO:κO:κO:κO':.
kappa.O':κO'':κO'':κO''':κO''']]-,
octapotassium (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 93222-17-4 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-
oxononaoxononatungstate)[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]tri-,
hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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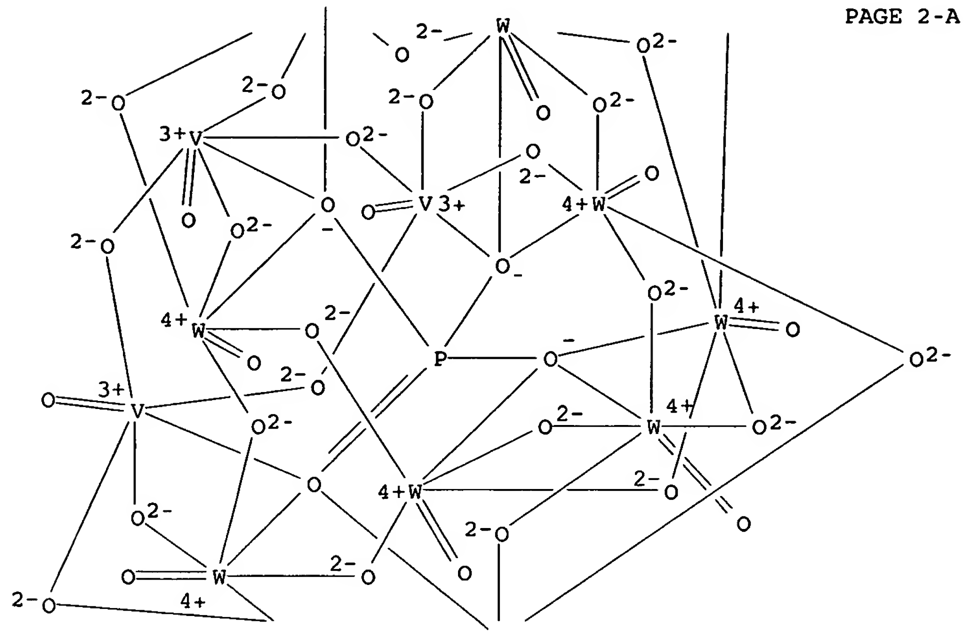

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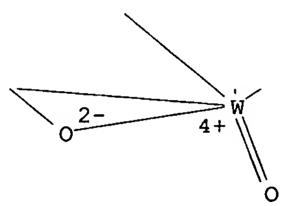


PAGE 3-A

●6 K+

RN 101144-77-8 HCAPLUS

CN Vanadate(9-), [heptacosa-μ-oxopentadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'',κO'':κO''':κO''']]pentadecatungstate]nona-μ-oxotrioxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]tri-, octapotassium hydrogen (9CI) (CA INDEX NAME)

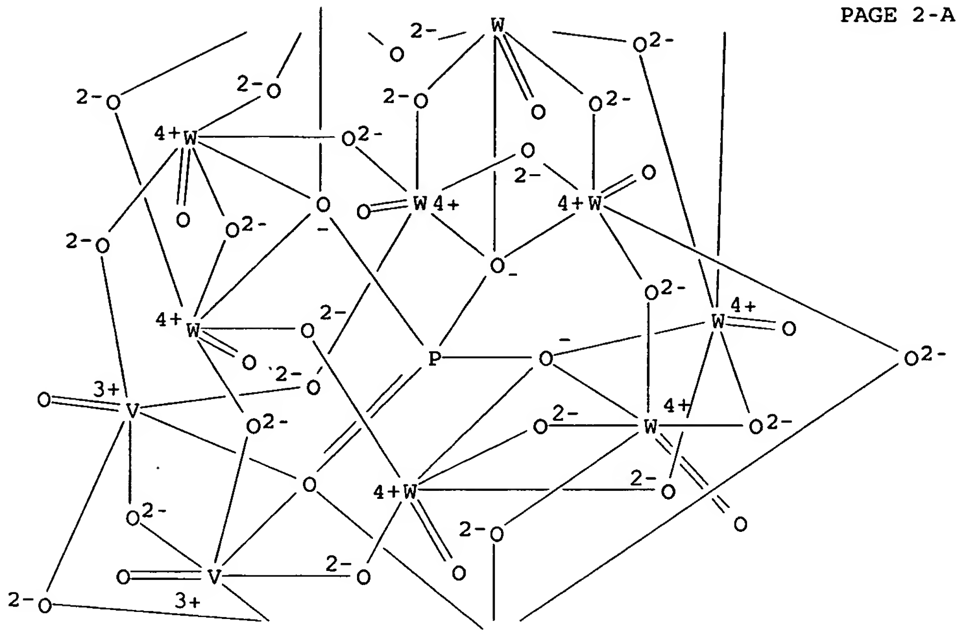
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 119390-04-4 HCAPLUS

CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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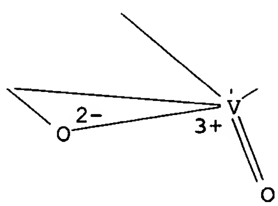

● 6 K^+

RN 133348-27-3 HCAPLUS
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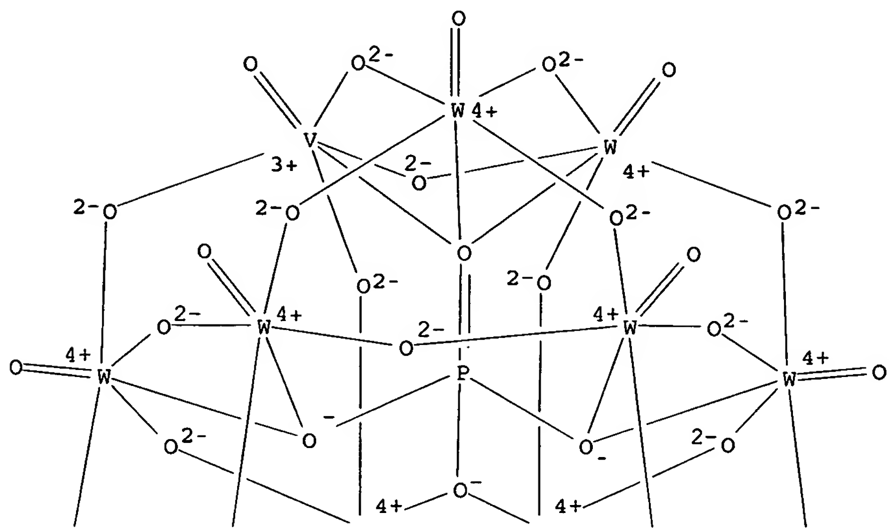
PAGE 1-A



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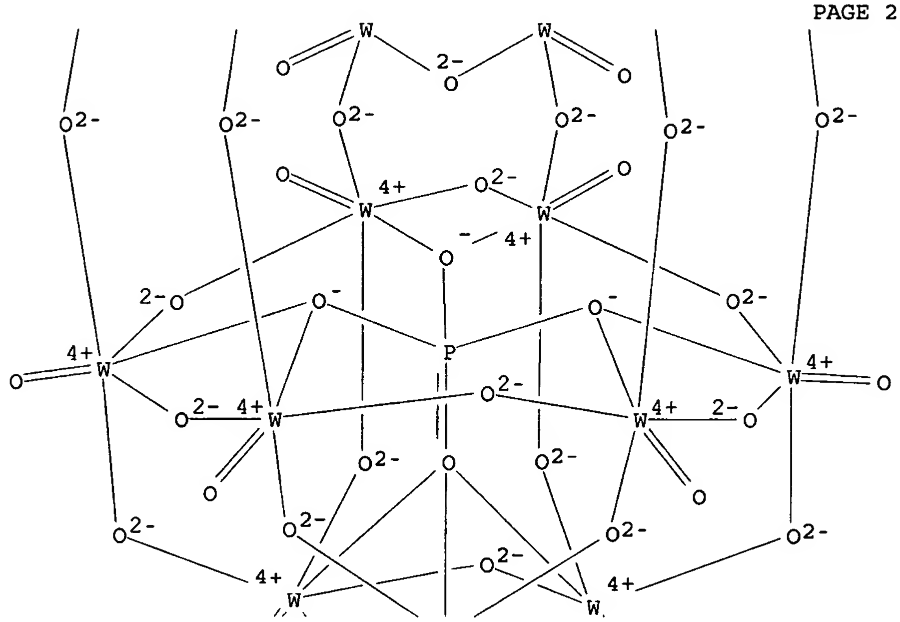

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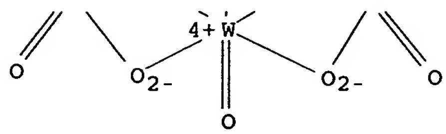


●7 K+

RN 133348-30-8 HCAPLUS
CN Vanadate(8-), [nonacosa-μ-oxohexadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]hexadecatungstate]hepta-μ-oxodioxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]di-, octapotassium (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
CC 1-3 (**Pharmacology**)
IT **12026-98-1** 12200-88-3 **12773-19-2** 13472-45-2 **37234-37-0** **59519-71-0** **59519-72-1** **85585-36-0** **93222-17-4** 93240-37-0 **101144-77-8** **119390-04-4** **133348-27-3** **133348-30-8**
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(insulin mimetic effect of a tungstate cluster. effect of oral administration of homo-polyoxotungstates and vanadium-substituted polyoxotungstates on blood glucose level of STZ mice)
REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 32 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:639652 HCAPLUS
TITLE: Modifications of catalytic properties in multi-iron sandwich-type **polyoxometalates** based on iron populations in the central tetrameric unit
AUTHOR(S): Anderson, Travis M.; Zhang, Xuan; **Okun, Nelya**; Chen, Qin; **Hill, Craig L.**
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Abstracts of Papers, 222nd ACS National Meeting, Chicago, IL, United States, August 26-30, 2001 (2001), INOR-465. American Chemical Society: Washington, D. C.
CODEN: 69BUZP
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB A new diferric sandwich compound with the formula, FeIII2(NaOH2)2(P2W15O56)2, has been prepared by the reaction of trivacant α-Na12P2W15O56 with FeCl2•4H2O followed by O2 oxidation in aqueous solution The complex has been fully characterized by single crystal X-ray diffraction anal. and is consistent with all IR, 31P NMR, and elemental anal. data. Unlike the tetraferric Dawson sandwich compound, the tetra-n-butylammonium salt of this complex is a highly effective catalyst for H2O2-based epoxidn. of alkenes. The substituent effects of the FeIII centers on the electrochem. and catalytic properties of the two complexes are compared.

L114 ANSWER 33 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:359866 HCAPLUS
DOCUMENT NUMBER: 134:362656
TITLE: **Polyoxometalate** materials, metal-containing materials, and methods of use thereof
INVENTOR(S): Hill, Craig; Xu, Ling; Rhule, Jeffrey T.; Boring, Eric A.
PATENT ASSIGNEE(S): Emory University, USA
SOURCE: PCT Int. Appl., 68 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001034279	A2	20010517	WO 2000-US28152	20001011
WO 2001034279	A3	20020124		
W: AU, CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2387092	AA	20010517	CA 2000-2387092	20001011
EP 1224024	A2	20020724	EP 2000-970807	20001011
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
US 6723349	B1	20040420	US 2000-689231	20001011
AU 778768	B2	20041223	AU 2000-80132	20001011
US 2003049330	A1	20030313	US 2002-134774	20020429
US 2003072811	A1	20030417	US 2002-186547	20020701
US 2004185116	A1	20040923	US 2004-767578	20040129

PRIORITY APPLN. INFO.:

US 1999-158952P	P	19991012
US 2000-689231	A3	20001011
WO 2000-US28152	W	20001011
US 2002-134774	A1	20020429

AB The invention relates to a **polyoxometalate** topical

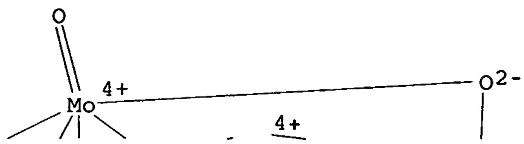
composition for removing a **contaminant** from an environment, comprising a topical carrier and at least one **polyoxometalate**, with the proviso that the **polyoxometalate** is not H5PV2Mo10O40; K5Si(H2O)MnIIIW11O39; K4Si(H2O)MnIVW11O39; or K5CoIIIW12O40. The invention further relates to a method for removing a **contaminant** from an environment by the **composition** and contacting a **polyoxometalate** powder or a **polyoxometalate** coating with the environment. It further relates to a modified **polyoxometalate**, comprising the **admixt.** of (1) a **polyoxometalate** and (2) a cerium, a silver, a gold, a platinum compound, or a **combination** thereof. The invention further relates to a method for removing a **contaminant** from an environment by contacting a modified material comprising (1) a material and (2) a metal compound comprising a transition metal compound, an actinide compound, a lanthanide compound, or a **combination** thereof, wherein the metal compound is not a **polyoxometalate.** The modified material comprises (1) a material comprising a topical carrier, a powder, a coating, or a fabric, and (2) a metal compound comprising a transition metal compound, an actinide compound, a lanthanide compound, or a **combination** thereof, wherein the metal compound is not a **polyoxometalate.** The invention further relates to an article comprising the modified material.

IT **12293-21-9 12293-24-2 67724-86-1**
73131-99-4 73132-07-7 122795-31-7
170663-07-7 187289-60-7 273201-47-1
340737-25-9 340737-27-1 340737-28-2
340737-29-3 340737-30-6 340737-31-7
340737-33-9
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**polyoxometalate** materials for removing environmental **contaminant**)

RN 12293-21-9 HCAPLUS

CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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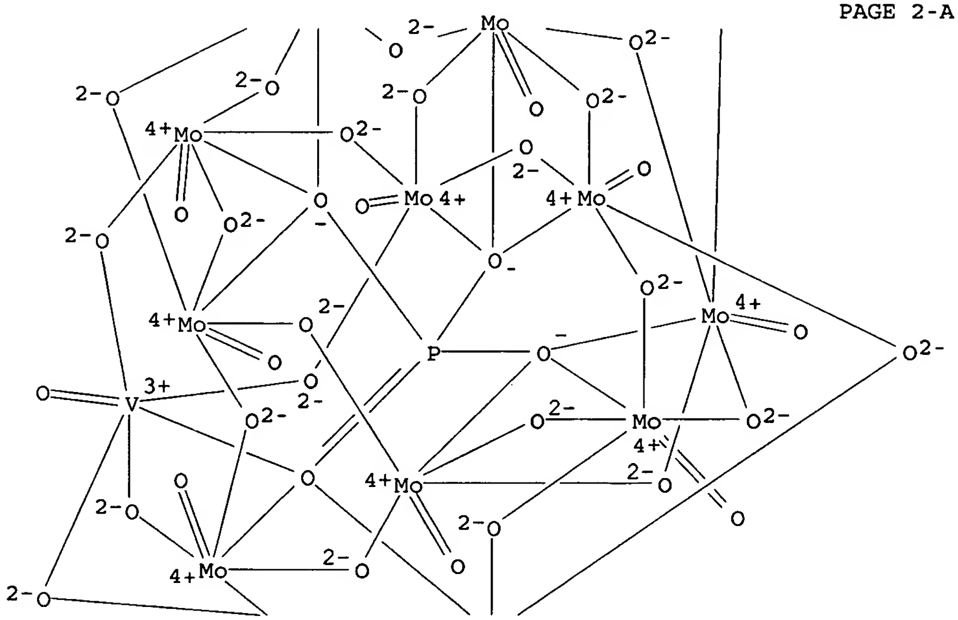

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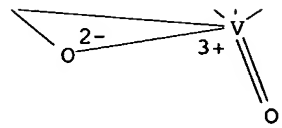

●5 H^+

RN 12293-24-2 HCAPLUS
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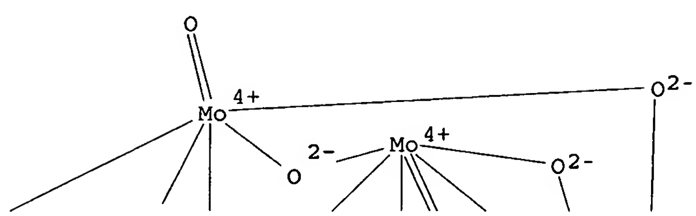
PAGE 1-A



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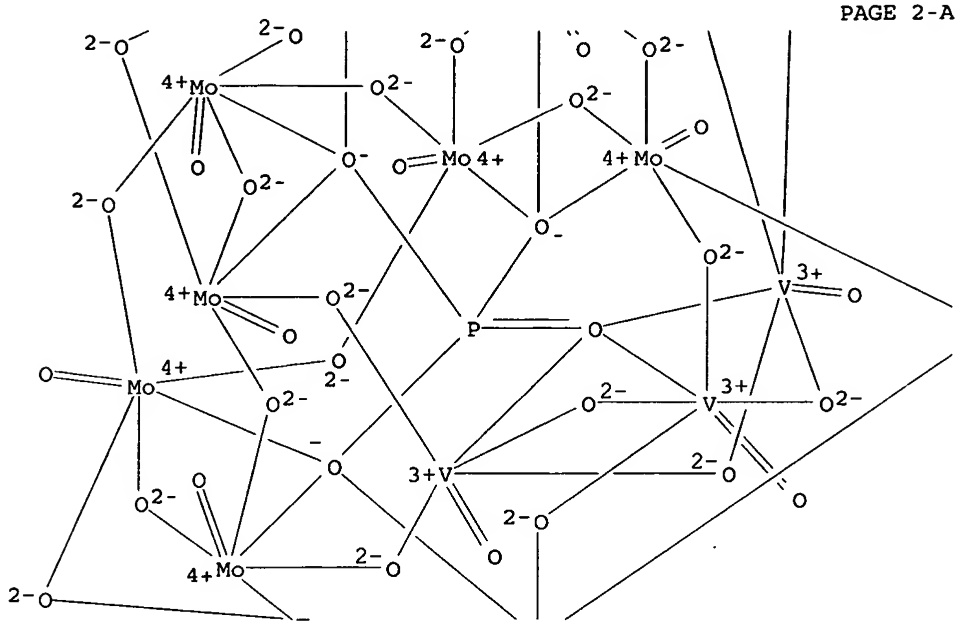

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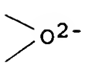

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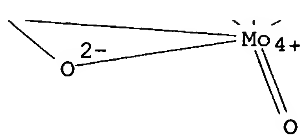

●6 H^+

RN 67724-86-1 HCAPLUS
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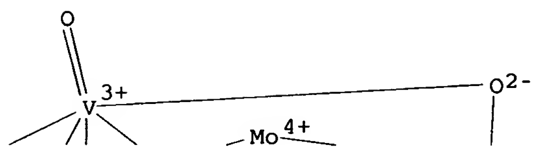
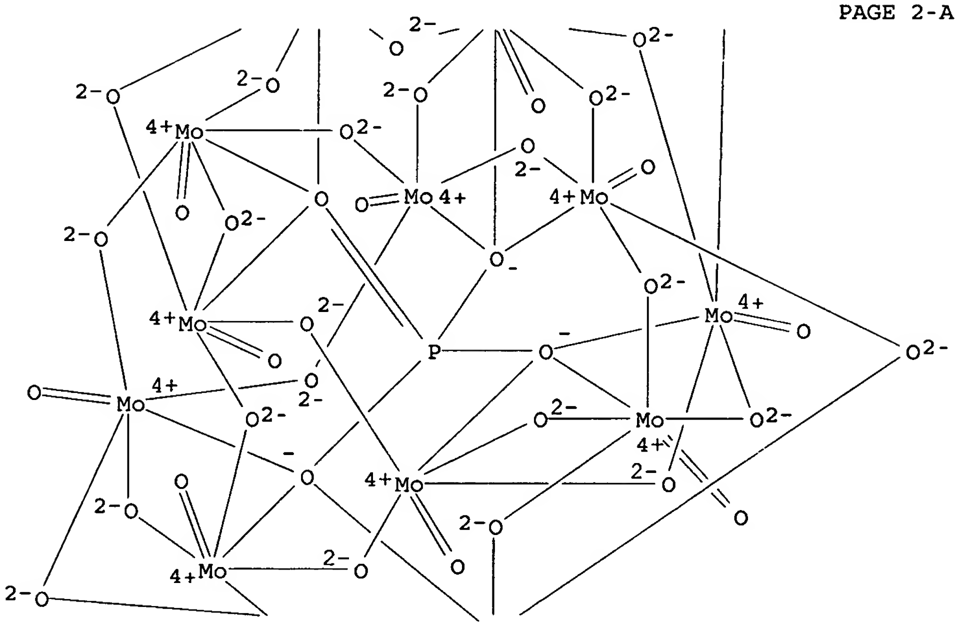
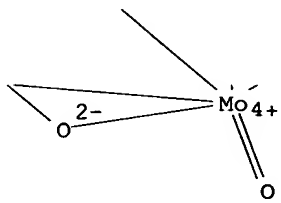
PAGE 1-A



PAGE 2-A





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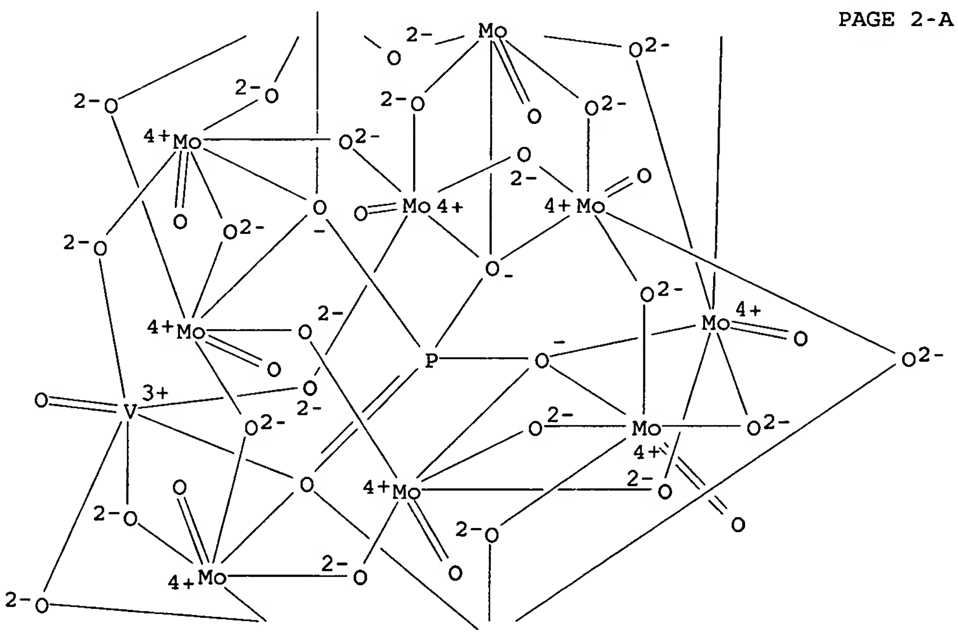
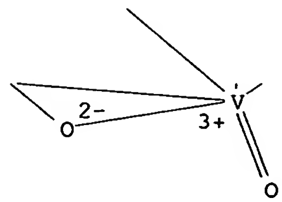
● 4 Na^+

RN 73131-99-4 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentasodium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



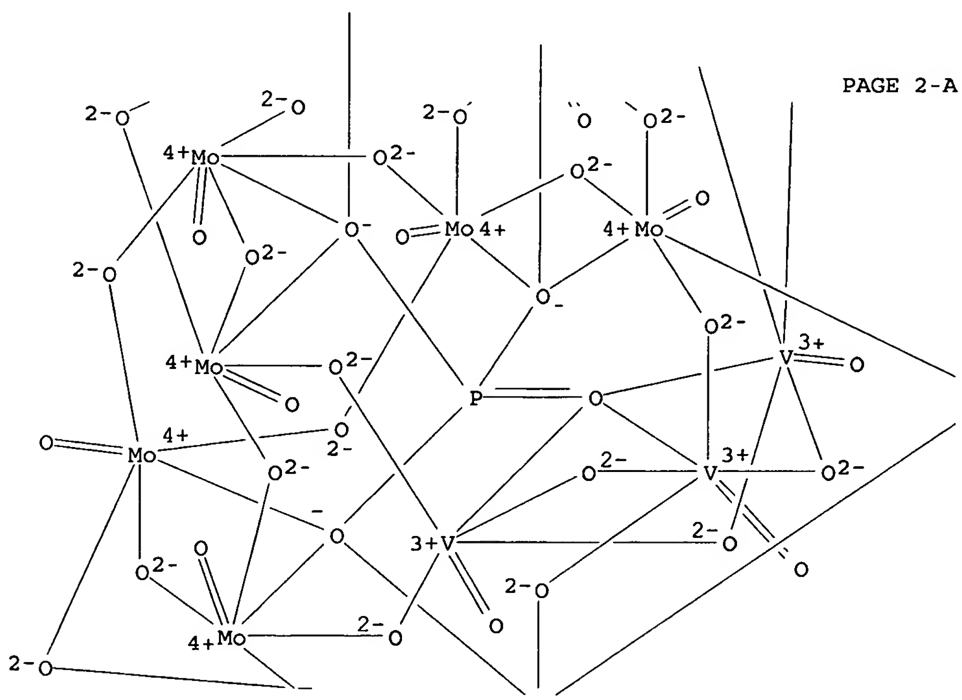
PAGE 2-A



●5 Na+

RN 73132-07-7 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononamolybdate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexasodium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



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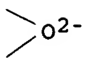

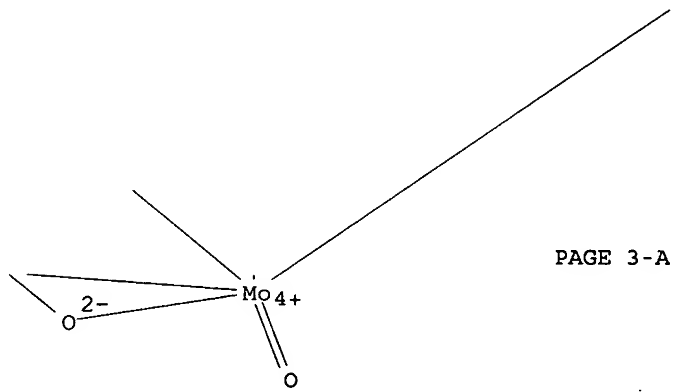

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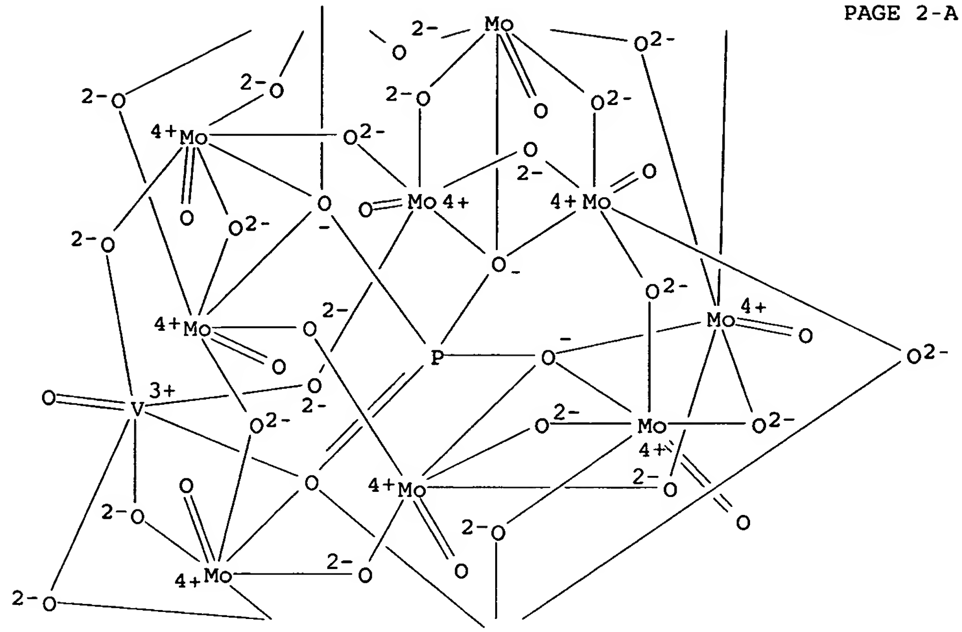
●6 Na^+

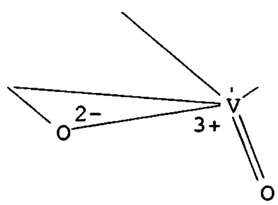
RN 122795-31-7 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A

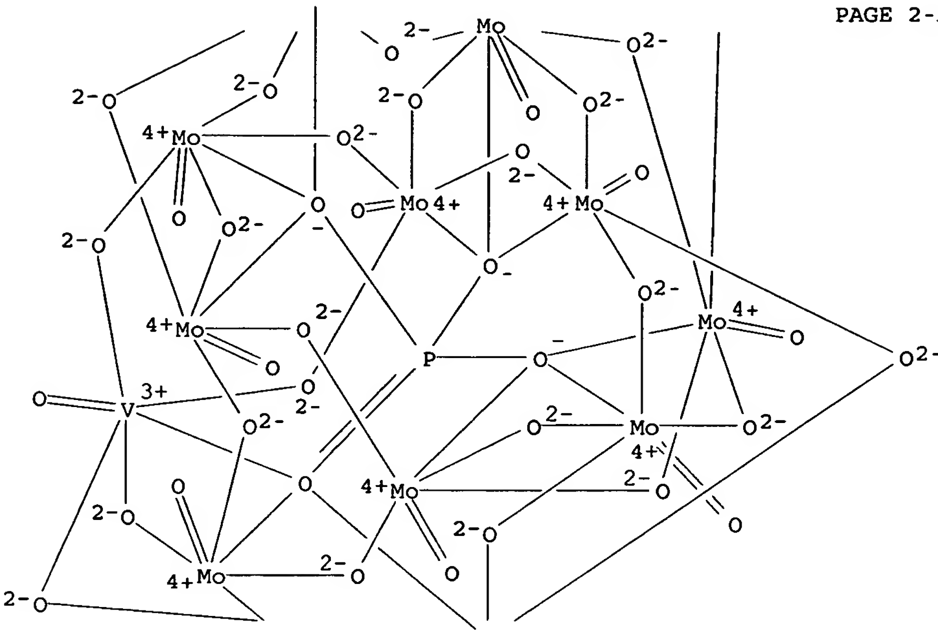


● 5 K^+

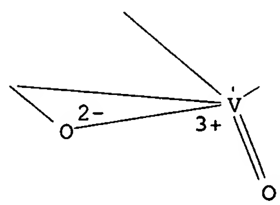
RN 170663-07-7 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]di-, pentalithium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A

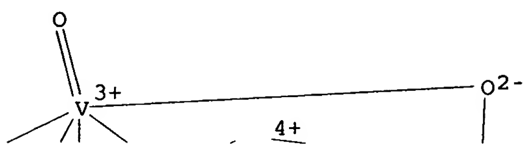


● 5 Li^+

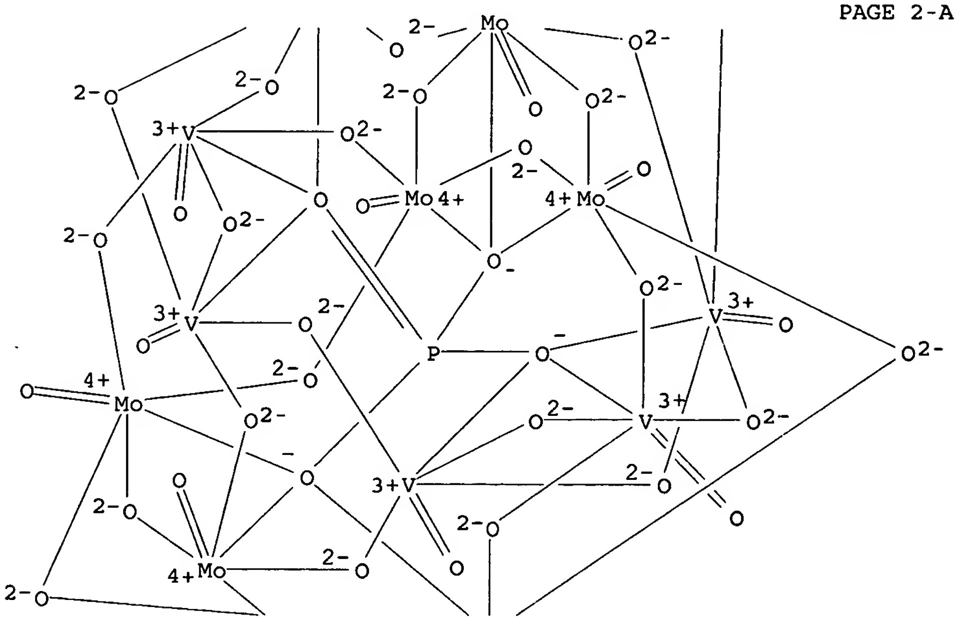
RN 187289-60-7 HCAPLUS

CN Vanadate(9-), (octa-μ-oxohexaoxohexamolybdate)hexadeca-μ-oxohexaoxo[μ12-[phosphato(3-)-κO:κO:κO:.kappa .O':κO':κO':κO'':κO'':κO'':κO' '':κO''':κO''']]hexa-, nonasodium (9CI) (CA INDEX NAME)

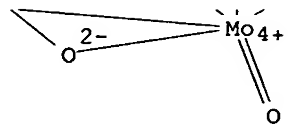
PAGE 1-A



PAGE 2-A



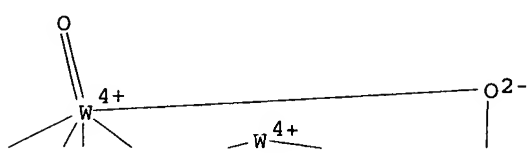
PAGE 3-A



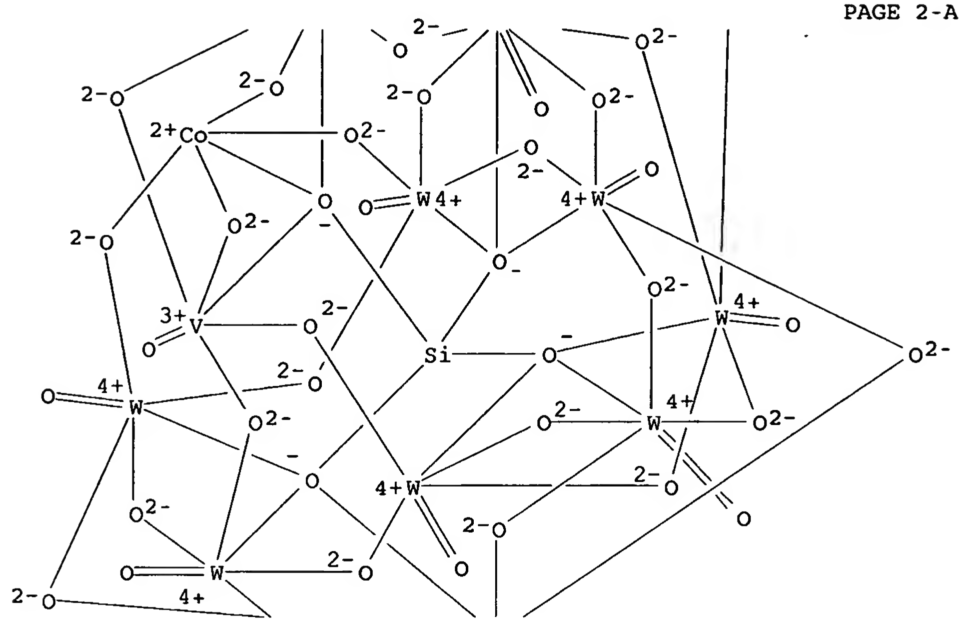
● 9 Na^{+}

RN 273201-47-1 HCAPLUS
CN Vanadate(7-), cobaltate(heptadeca-μ-oxodecaoxodecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]hepta-μ-oxooxo-, heptapotassium (9CI) (CA INDEX NAME)

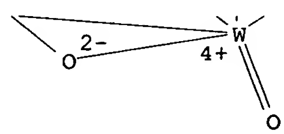
PAGE 1-A



PAGE 2-A



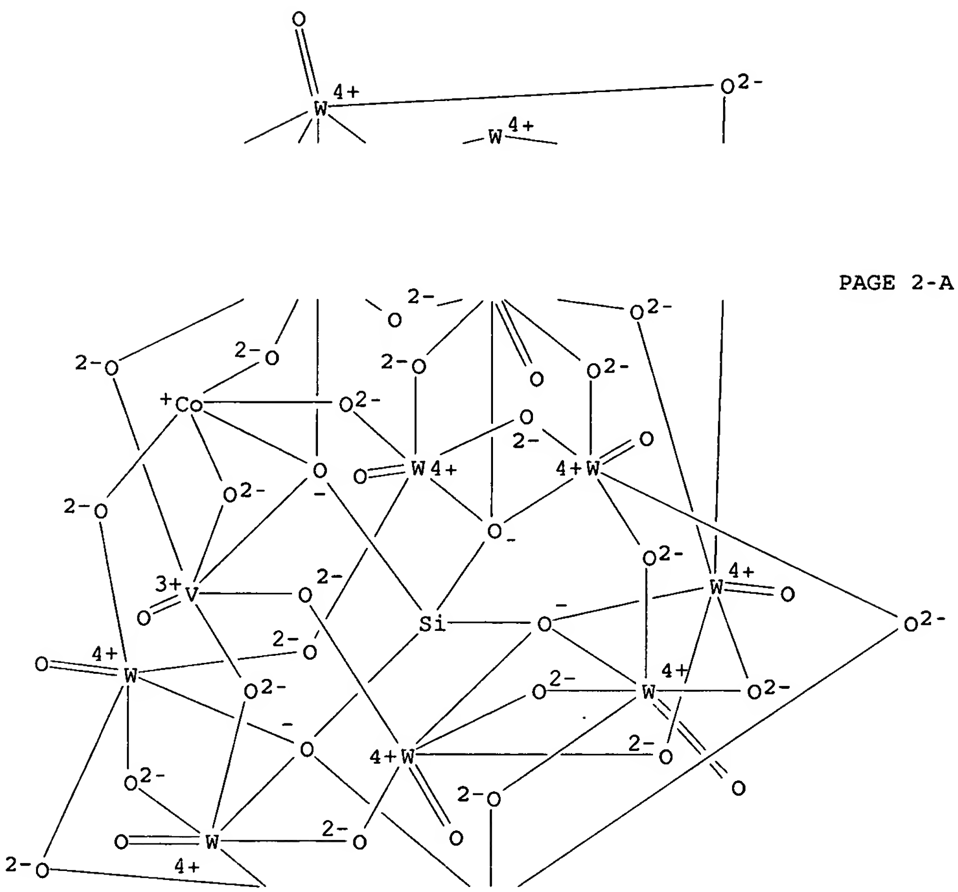
PAGE 3-A



● 7 K^+

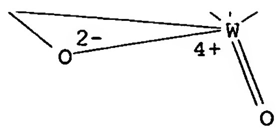
RN 340737-25-9 HCAPLUS
CN Vanadate(8-), cobaltate(heptadeca-μ-
oxodecaoxodecatungstate)[μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]hepta-
μ-oxooxo-, octapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

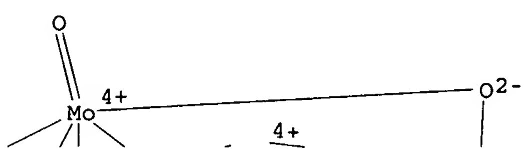
PAGE 3-A



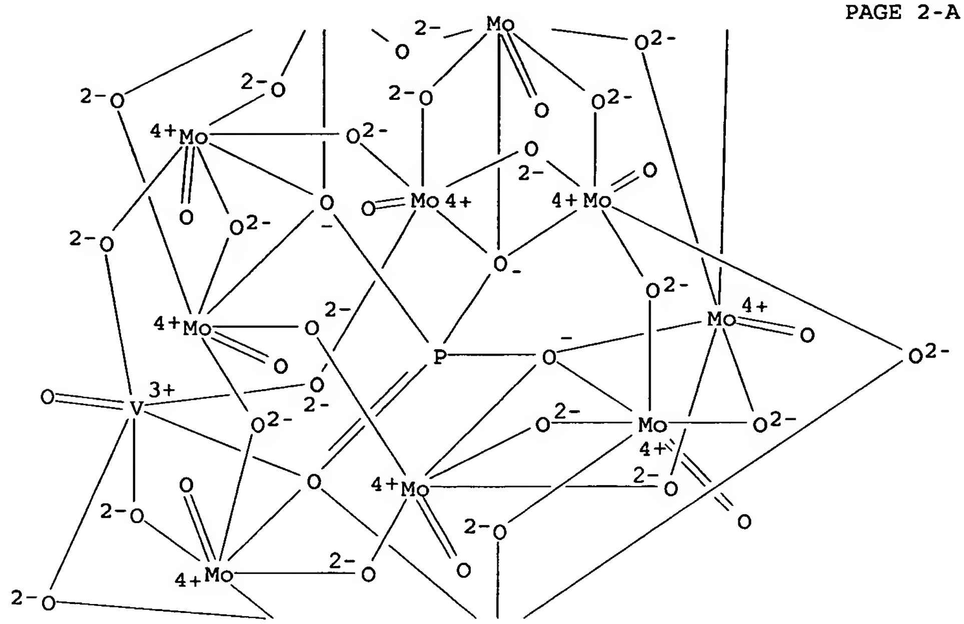
●8 K+

RN 340737-27-1 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentasilver(1+) (9CI) (CA INDEX NAME)

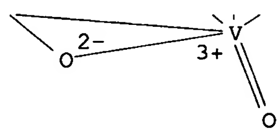
PAGE 1-A



PAGE 2-A



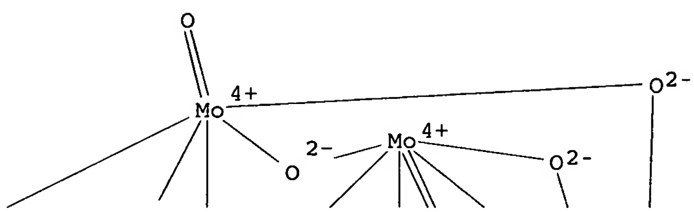
PAGE 3-A



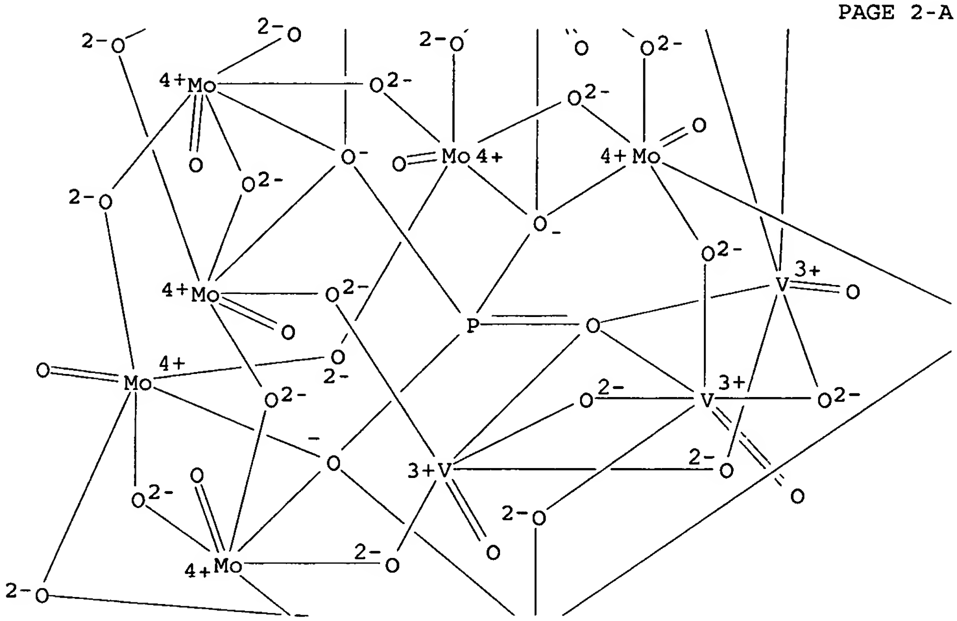
● 5 Ag(I) +

RN 340737-28-2 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononamolybdate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexasilver(1+) (9CI) (CA INDEX NAME)

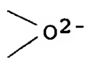
PAGE 1-A



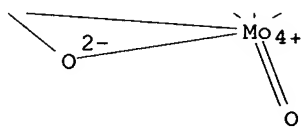
PAGE 2-A



PAGE 2-B



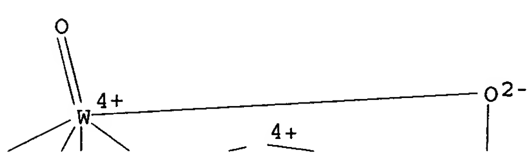
PAGE 3-A



●6 Ag(I)$^{+}$

RN 340737-29-3 HCAPLUS
CN Vanadate(8-), cobaltate(eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxotetra-μ4-oxooxo-, octasilver(1+) (9CI) (CA INDEX NAME)

PAGE 1-A



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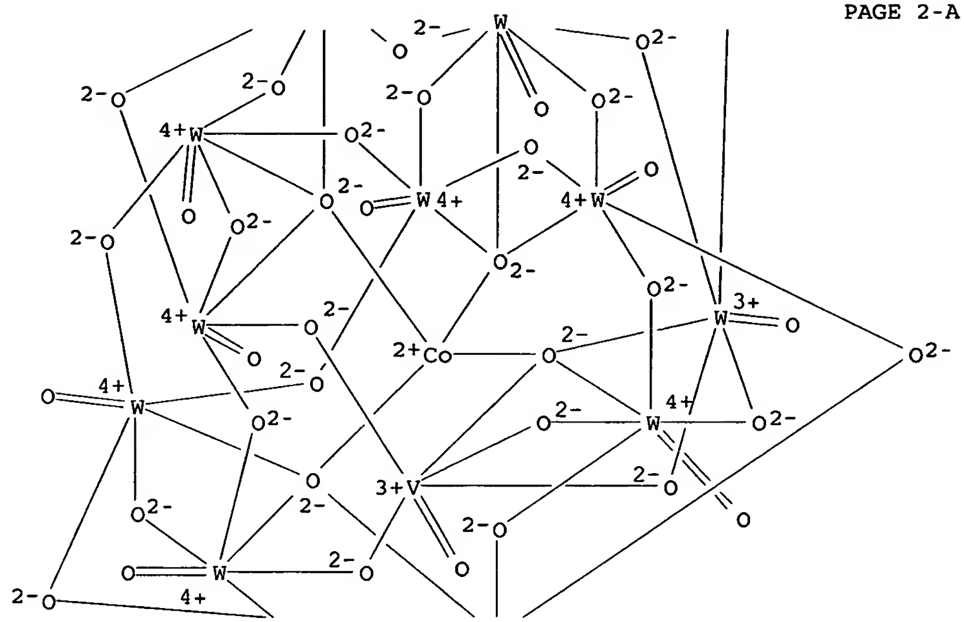
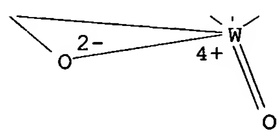


PAGE 3-A

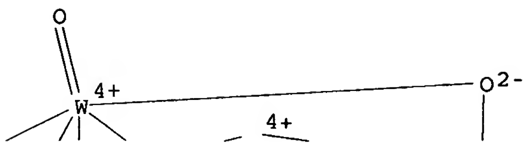


●8 Ag(I)$^{+}$

RN 340737-30-6 HCAPLUS

CN Vanadate(7-), (dodeca-μ-oxooctaoxooctatungstate)dodeca-μ-oxotetraoxo[μ12-[phosphato(3-)-κO:κO:κO:.kapp a.O':κO':κO':κO'':κO'':κO'':κO ''':κO''':κO''']]tetra-, pentasodium dihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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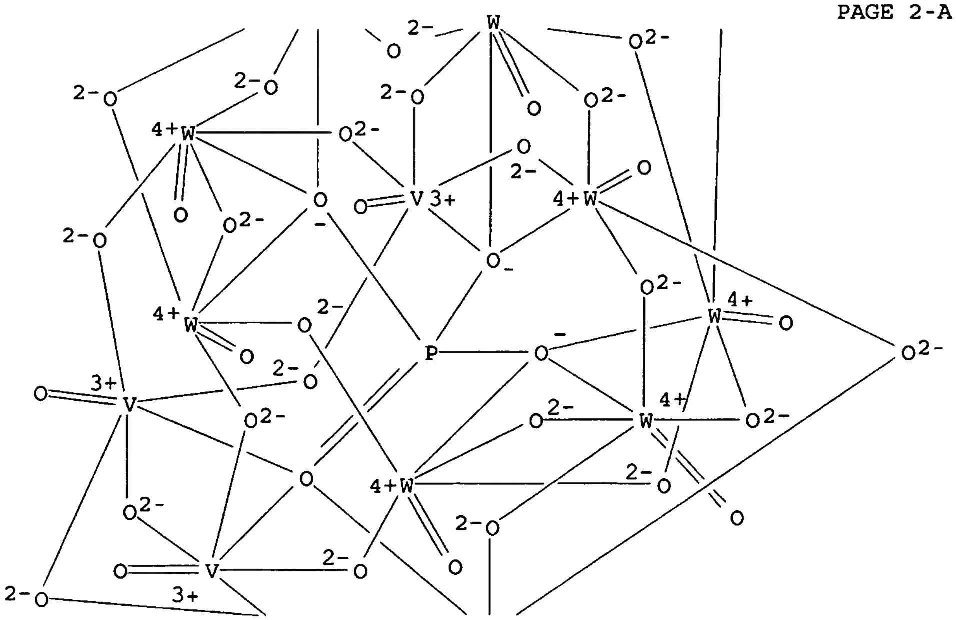

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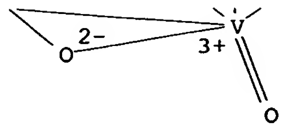
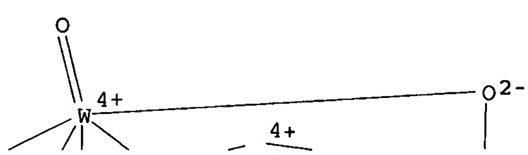


●2 H+

●5 Na+

RN 340737-31-7 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxoundecaoxo(oxocuprate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kappa.O':κO'':κO'':κO'':κO''':κO''':.kappa.O''']]undeca-, pentasodium (9CI) (CA INDEX NAME)

PAGE 1-A



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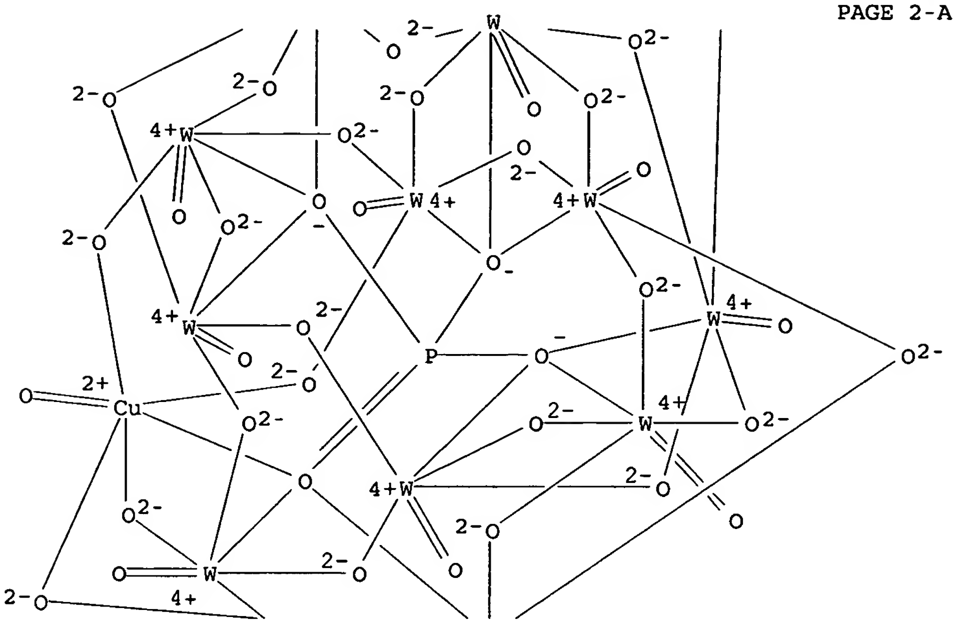
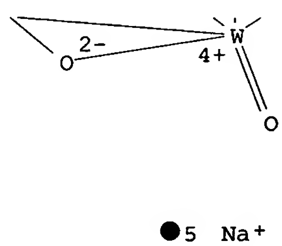
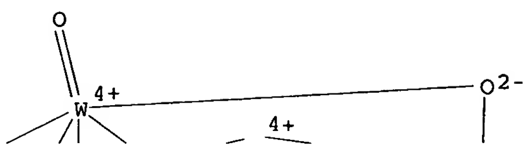


PAGE 3-A



RN 340737-33-9 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxoundecaoxo(oxomanganate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kappa.O':κO'':κO'':κO'':κO''':κO''':.kappa.O''']]undeca-, pentasodium (9CI) (CA INDEX NAME)

PAGE 1-A



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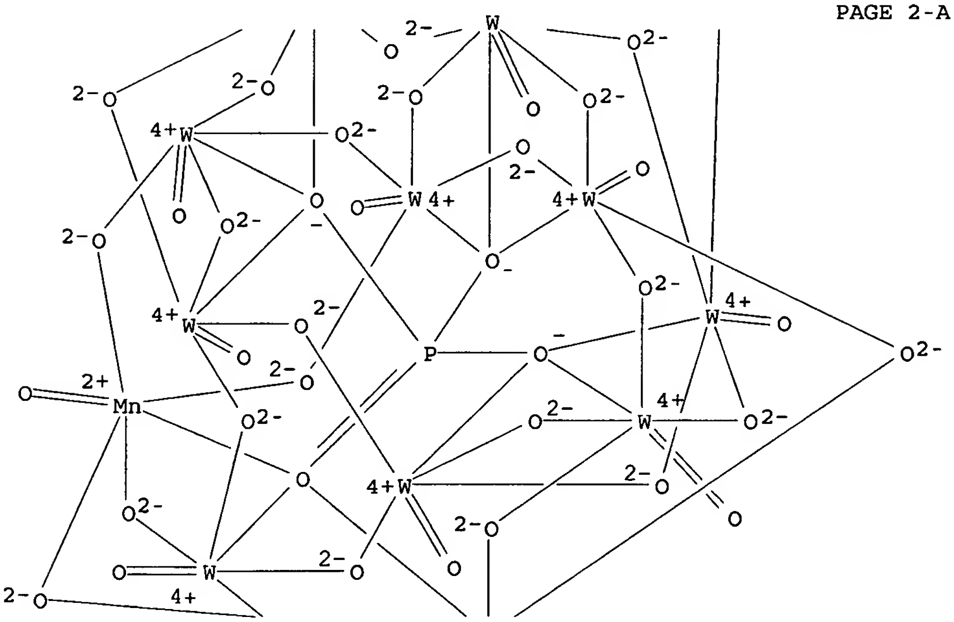

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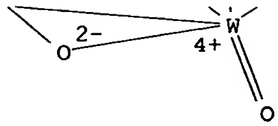
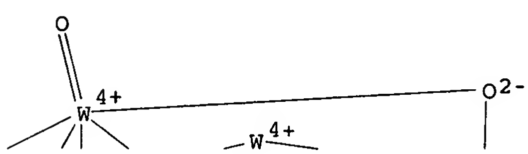


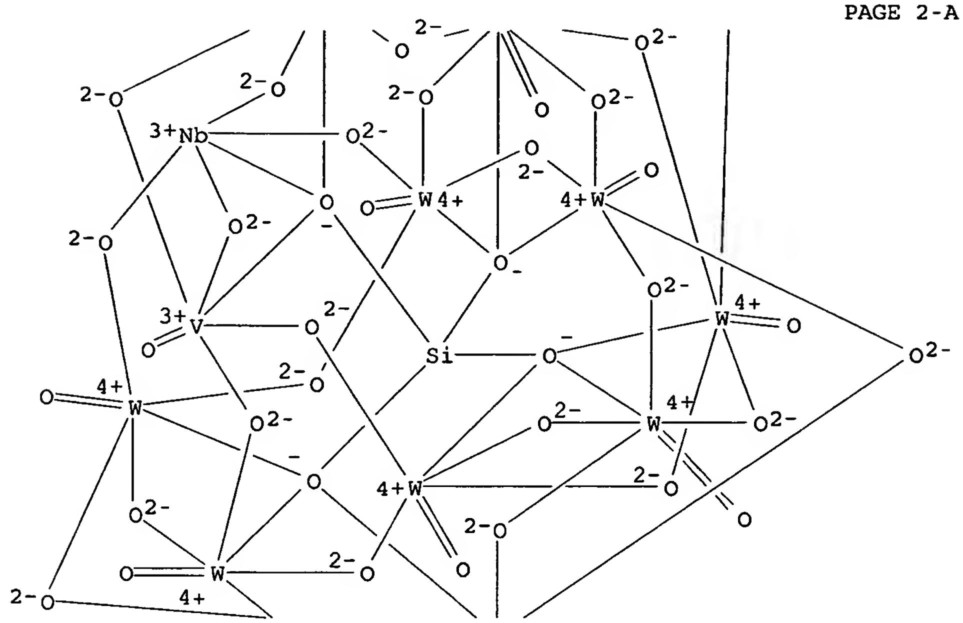
●5 Na+

IT 340737-35-1P
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polyoxometalate** materials for removing environmental **contaminant**)
RN 340737-35-1 HCAPLUS
CN Niobate(6-), (heptadeca-μ-oxodecaoxodecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]hepta-μ-oxo(oxovanadate)-, hexasodium (9CI) (CA INDEX NAME)

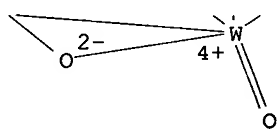
PAGE 1-A



PAGE 2-A



PAGE 3-A



● 6 Na^{+}

IC ICM B01D053-00
CC 4-3 (**Toxicology**)
ST **polyoxometalate** environment **contaminant** removal
IT Environmental **pollution**
  Toxicants
    (**polyoxometalate** materials for removing environmental **contaminant**)
IT Heteropoly acids
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
    (**polyoxometalate** materials for removing environmental **contaminant**)
IT 50-00-0, Formaldehyde, biological studies 74-93-1, Methyl mercaptan, biological studies 75-07-0, Acetaldehyde, biological studies 75-18-3, Methyl sulfide 75-50-3, Trimethylamine, biological studies 79-09-4, Propionic acid, biological studies 100-42-5, Styrene, biological studies 107-92-6, n-Butyric acid, biological studies 109-52-4, n-Valeric acid, biological studies 110-81-6, Diethyl disulfide 110-86-1, Pyridine, biological studies 352-93-2, Diethyl sulfide 503-74-2, Isovaleric acid 624-92-0, Dimethyl disulfide 630-08-0, Carbon monoxide, biological studies 693-07-2, 2-Chloroethyl ethyl sulfide 7664-41-7, Ammonia, biological studies 7783-06-4, Hydrogen

sulfide, biological studies
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(**polyoxometalate** materials for removing environmental **contaminant**)

IT 1941-27-1 7487-88-9, Magnesium sulfate, biological studies 7733-02-0, Zinc sulfate 7757-83-7, Sodium sulfite 7758-98-7, Copper sulfate, biological studies 7761-88-8, Silver nitrate, biological studies 7783-93-9, Silver perchlorate 7785-87-7, Manganese sulfate 7786-81-4, Nickel sulfate 10028-22-5, Ferric sulfate 10101-53-8, Chromic sulfate 10124-43-3, Cobalt sulfate 10139-51-2 **12293-21-9** **12293-24-2** 13693-11-3, Titanium sulfate 16774-21-3 16903-35-8 16941-12-1 27774-13-6, Vanadyl sulfate 50480-98-3 62493-65-6 **67724-86-1** **73131-99-4** **73132-07-7** 90939-15-4 101346-99-0 **122795-31-7** 162858-16-4 **170663-07-7** 184842-06-6 **187289-60-7** 215595-07-6 **273201-47-1** 340718-18-5 340718-19-6 340718-21-0 **340737-25-9** 340737-26-0 **340737-27-1** **340737-28-2** **340737-29-3** **340737-30-6** **340737-31-7** **340737-33-9** 340737-48-6
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**polyoxometalate** materials for removing environmental **contaminant**)

IT 340718-26-5P
RL: BUU (Biological use, unclassified); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(**polyoxometalate** materials for removing environmental **contaminant**)

IT 340718-30-1P
RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polyoxometalate** materials for removing environmental **contaminant**)

IT 153481-12-0P **340737-35-1P**
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polyoxometalate** materials for removing environmental **contaminant**)

IT 92762-45-3 340718-23-2, Niobium potassium hydroxide oxide (Nb6K7(OH)O15) 340718-28-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(**polyoxometalate** materials for removing environmental **contaminant**)

L114 ANSWER 34 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:683729 HCAPLUS
DOCUMENT NUMBER: 134:218089
TITLE: New **polyoxometalate**-TSPS for CW agent detection and **decontamination**
AUTHOR(S): Rhule, Jeffrey T.; Hill, Craig L.
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Proceedings of the ERDEC Scientific Conference on Chemical and Biological Defense Research, Aberdeen Proving Ground, MD, United States, Nov. 17-20, 1998 (1999), Meeting Date 1998, 307-313. Editor(s): Berg, Dorothy A. National Technical Information Service: Springfield, Va.

CODEN: 69AJH3
DOCUMENT TYPE: Conference
LANGUAGE: English

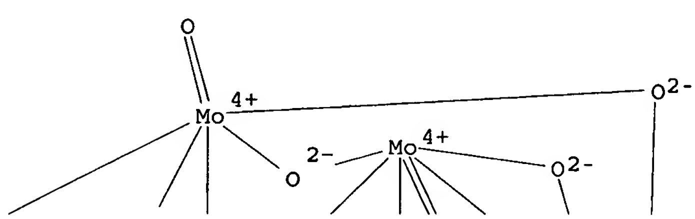
AB The purpose of this research is to investigate the detection and **decontamination** capabilities of **polyoxometalates** (POMs) when used in conjunction with currently available topical skin protectant creams (TSPs). H6[PV3Mo9O40] was finely ground and **mixed** in the cream to give a 25% weight/weight suspension. CEES was layered on top of the cream and the time required for the POM-cream **mixture** to undergo a perceivable color change was noted. In new expts., the first systems for the rapid and catalytic oxidation degradation of CEES in a TSP model were discovered: POM/CEES/dichloroethane - trifluroethanol /oxidant, where the oxidant is O2 or benzoyl peroxide.

IT **12293-24-2**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** topical skin protectant creams for chemical **warfare** agent detection and **decontamination**)

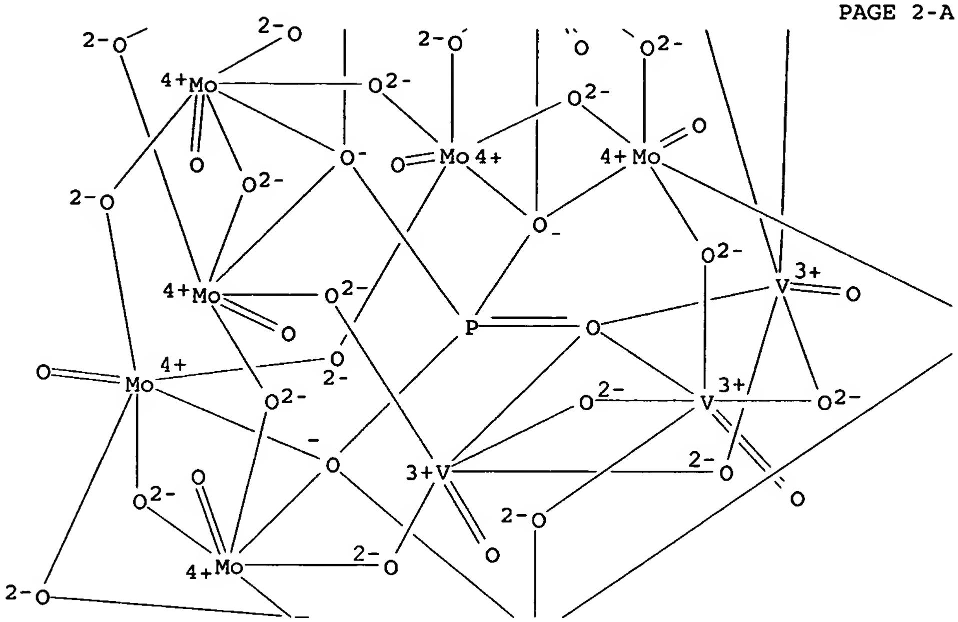
RN 12293-24-2 HCAPLUS

CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononamolybdate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexahydrogen (9CI) (CA INDEX NAME)

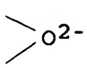
PAGE 1-A



PAGE 2-A



PAGE 2-B



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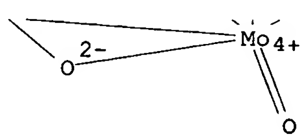


● 6 H^+

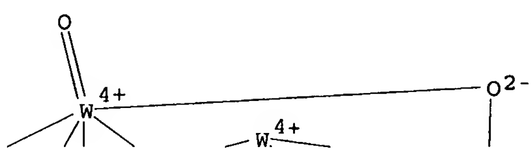
CC 4-3 (**Toxicology**)
ST **polyoxometalate** chem **warfare** agent detection; **decontamination** chem **warfare** agent **polyoxometalate**; protection skin chem **warfare** agent **polyoxometalate**
IT Chemical **warfare** agents
(**polyoxometalate** topical skin protectant creams for

chemical **warfare** agent detection and
decontamination)
IT Heteropoly acids
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(**polyoxometalate** topical skin protectant creams for chemical **warfare** agent detection and **decontamination**)
IT Drug delivery systems
(topical, PFPE #1511; **polyoxometalate** topical skin protectant creams for chemical **warfare** agent detection and **decontamination**)
IT 693-07-2, 2-Chloroethylethylsulfide
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(**polyoxometalate** topical skin protectant creams for chemical **warfare** agent detection and **decontamination**)
IT **12293-24-2**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** topical skin protectant creams for chemical **warfare** agent detection and **decontamination**)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

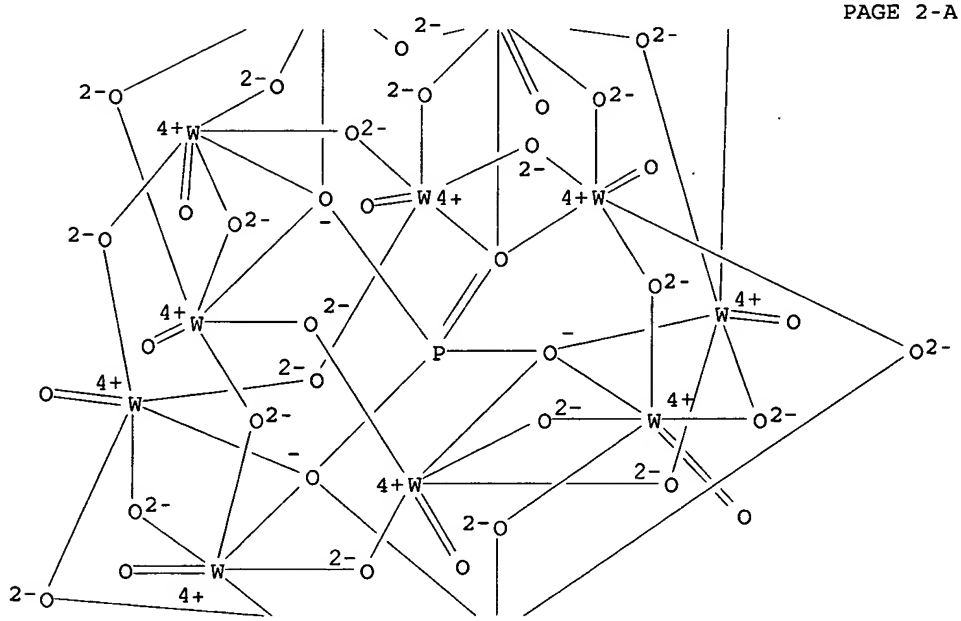
L114 ANSWER 35 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:567386 HCAPLUS
DOCUMENT NUMBER: 133:210587
TITLE: Preparation of high temperature **composite** membranes for hydrogen proton exchange membrane fuel cells
AUTHOR(S): Lin, Jung-Chou; Kunz, H. Russell; Cutlip, Michael B.; Fenton, James M.
CORPORATE SOURCE: Department of Chemical Engineering, University of Connecticut, Storrs, CT, 06269-3222, USA
SOURCE: Hazardous and Industrial Wastes (1999), 31st, 656-662
CODEN: HIWAEB; ISSN: 1044-0631
PUBLISHER: Technomic Publishing Co., Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB High temperature proton exchange membranes (PEM) for fuel cells have been prepared Single-cell testing results using methanol fuel verify that membranes can be operated at over 100°C without pressurizing the system. Internal resistance (IR) loss at 120°C for Nafion-Teflon-phosphotungstic acid (NTPA) membrane is 19 mv at 108 mA/cm2 which is superior to other available membranes. Nafion-zirconium hydrogen phosphate (NZHP) membranes also show reasonable conductivity and favorable characteristics at temps. over 100 °C. Incorporating platinum into the NZP **composite** membrane is being conducted to further improve the conductivity Other potential high temperature membranes such as Nafion containing fine particles have been prepared for comparison. Higher temperature membranes should improve resistance to carbon monoxide **poisoning.**
IT **1343-93-7**, Phosphotungstic acid
RL: DEV (Device component use); USES (Uses)
(preparation of high temperature **composite** membranes for hydrogen proton exchange membrane fuel cells)
RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-

κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

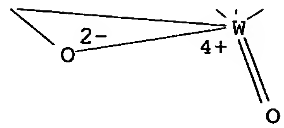
PAGE 1-A



PAGE 2-A



PAGE 3-A



●3 H^+

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72
IT Fluoropolymers, uses
Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(preparation of high temperature **composite** membranes for hydrogen proton exchange membrane fuel cells)
IT Fuel cells
(proton exchange membrane; preparation of high temperature **composite** membranes for hydrogen proton exchange membrane fuel cells)
IT **1343-93-7**, Phosphotungstic acid 9002-84-0, Teflon 66796-30-3, Nafion 117
RL: DEV (Device component use); USES (Uses)
(preparation of high temperature **composite** membranes for hydrogen proton exchange membrane fuel cells)
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 36 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:132682 HCAPLUS
DOCUMENT NUMBER: 133:1581
TITLE: **Polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media
AUTHOR(S): Johnson, Rhoma P.; Hill, Craig L.
CORPORATE SOURCE: Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SOURCE: Journal of Applied Toxicology (1999), 19(Suppl. 1), S71-S75
CODEN: JJATDK; ISSN: 0260-437X
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The aim of this research is to determine if appropriate **polyoxometalates** (POMs) could be added to perfluoropolyether topical skin protectants (TSPs) currently available or under development to give these TSPs the addnl. capability of detecting and in some cases catalytically **decontaminating** sulfur mustard (HD) and perhaps other chemical **warfare** agents (CWAs) at ambient temps. Detection would be based on significant color changes in the POM upon reduction by the CWA whereas catalytic **decontamination** would be based on the ability of some families of POMs to catalyze O2-based oxidns. by more than one mechanism. Five POMs (10-25% by weight) were each suspended in .apprx.5 g of the perfluoropolyether (PFPE, CF3O[-CF(CF3)CF2O-]x(-CF2O-)yCF3) "barrier" cream. A stoichiometric amount of HD sulfide simulant was layered on top of each POM-cream **mixture** The short reaction times were recorded for each system. Mechanistic studies were conducted using an PFPE oil analog of the barrier cream in a microemulsion with the sulfide simulant, POM, PFPE surfactant and

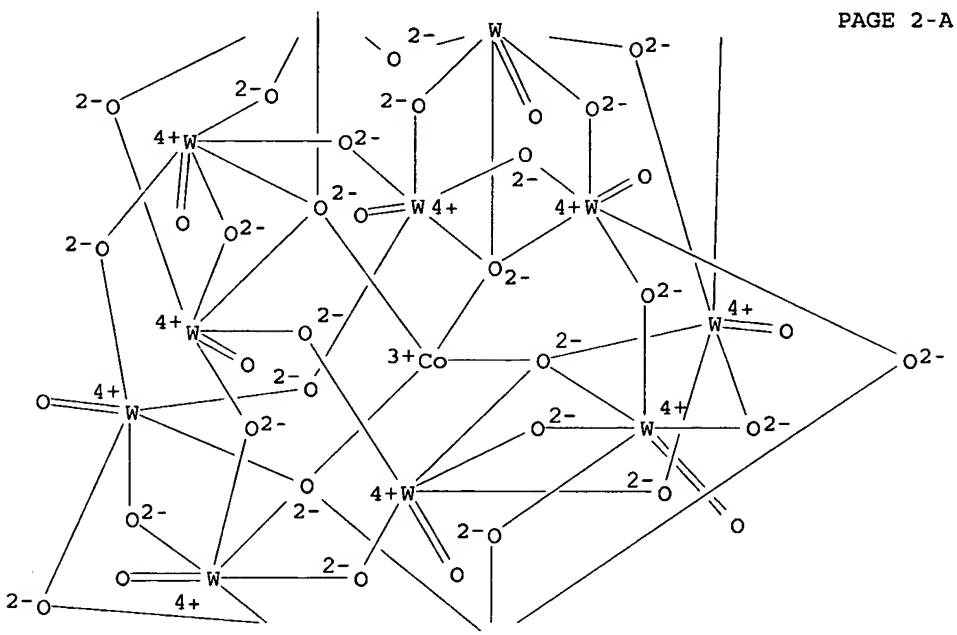
2,2,2-trifluoroethanol co-surfactant.

IT **12520-46-6 141503-78-8 222989-25-5**
270252-09-0
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)

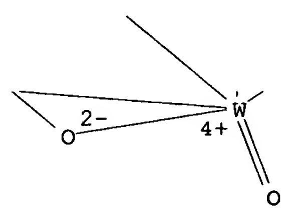
RN 12520-46-6 HCAPLUS
CN Tungstate(5-), cobaltatetetracosa-μ-oxotetra-μ4-oxododecaoxododeca-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●5 K^+

RN 141503-78-8 HCAPLUS
CN Tungstate(5-), (aquamanganate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetra

cosa-μ-oxoundecaoxoundeca-, pentapotassium (9CI) (CA INDEX NAME)

PAGE 1-A

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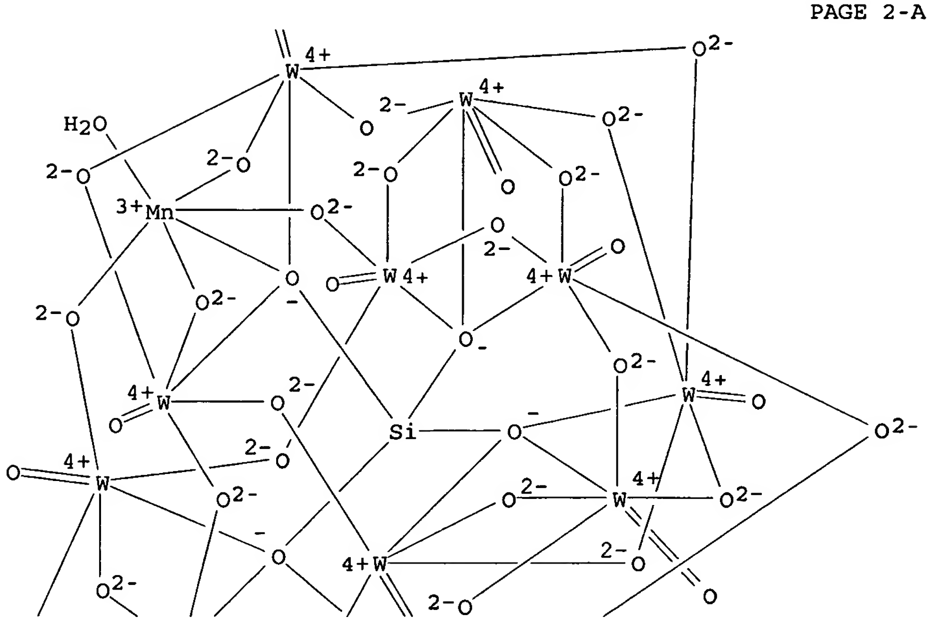
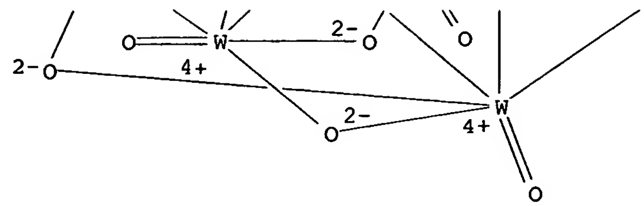


PAGE 3-A

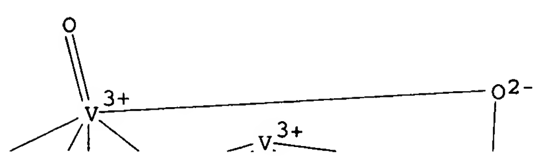


●5 K^+

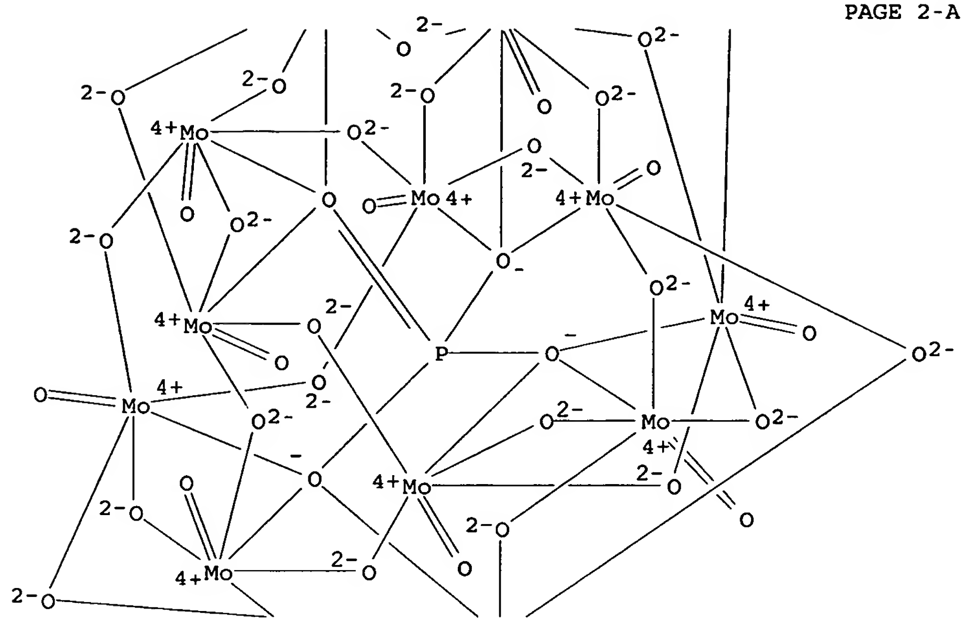
RN 222989-25-5 HCAPLUS

CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κ,O'κ:O''κ:O''κ:O''κ:O'''κ:O''']]di-, pentahydrogen (9CI) (CA INDEX NAME)

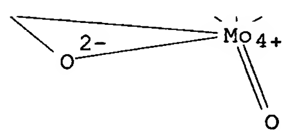
PAGE 1-A



PAGE 2-A



PAGE 3-A



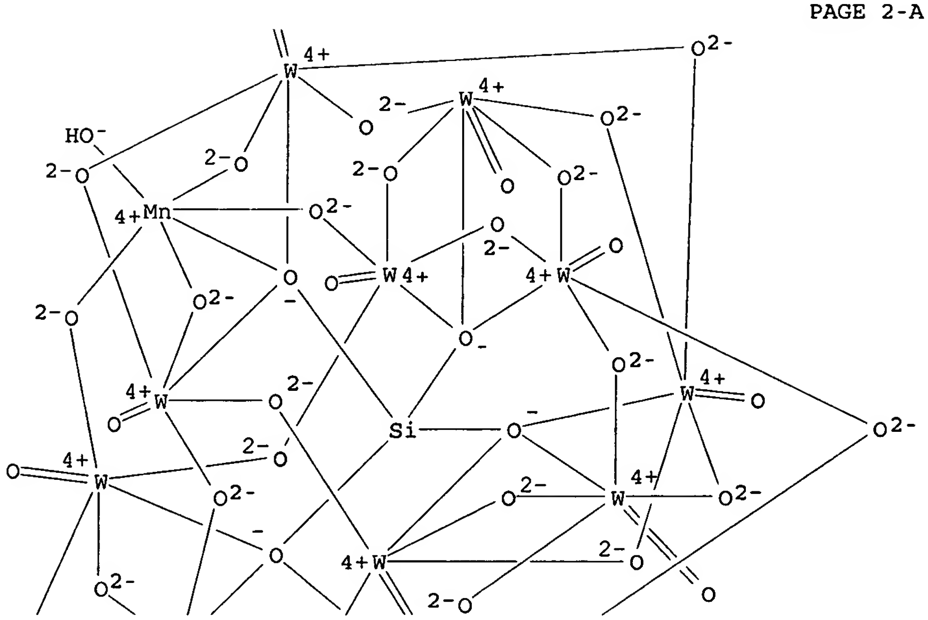
● 5 H^+

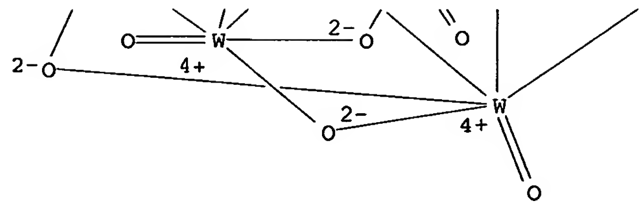
RN 270252-09-0 HCAPLUS

CN Tungstate(5-), (hydroxymanganate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxoundecaoxoundeca-, pentapotassium (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A





●5 K^+

CC 4-3 (**Toxicology**)
ST **polyoxometalate** oxidn chem **warfare** agent
IT Polyethers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fluorine-containing, topical skin protectants; **polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)
IT Polyethers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(perfluoro, topical skin protectants; **polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)
IT Fluoropolymers, biological studies
Fluoropolymers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyether-, topical skin protectants; **polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)
IT Chemical **warfare** agents
(**polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)
IT Heteropoly acids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)
IT **12520-46-6 141503-78-8 222989-25-5 270252-09-0**
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)
IT 505-60-2, Sulfur mustard
RL: RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
(**polyoxometalate** oxidation of chemical **warfare** agent simulants in fluorinated media)
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 37 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:375636 HCAPLUS
DOCUMENT NUMBER: 131:20590
TITLE: **Polyoxometalate** bleach catalysts in **cleaning** and detergent **compositions**
INVENTOR(S): Greenhill-Hooper, Michael John; Rey-Garcia, Fernando; Corma-Canos, Avelino; Jorda-Moret,

Jose Luis
PATENT ASSIGNEE(S): U.S. Borax Inc., USA
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9928426	A1	19990610	WO 1998-GB3618	1998 1203
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
ZA 9811059	A	19990603	ZA 1998-11059	1998 1203
CA 2312901	AA	19990610	CA 1998-2312901	1998 1203
AU 9913457	A1	19990616	AU 1999-13457	1998 1203
EP 1036154	A1	20000920	EP 1998-957033	1998 1203
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9815343	A	20001024	BR 1998-15343	1998 1203
JP 2001525451	T2	20011211	JP 2000-523306	1998 1203
US 6326342	B1	20011204	US 2000-555696	2000 0822
PRIORITY APPLN. INFO.:			GB 1997-25614 A	1997 1203
			WO 1998-GB3618 W	1998 1203

AB A bleaching **composition** comprises (i) a bleaching agent such as peroxide, and (ii) bleach catalyst, a **polyoxometalate** of Keggin, Dawson or Finke structure (A')a'(Cox'Yy',Mm',Oo).cH2O, where A' = cation; a' has a value such that (A')a' counters the anionic charge of (Cox', Yy', Mm', Oo); x' = 0.25-4; Y = P, Si or Co; y' = 1 or 2; o = 34-68; M = W, Mo, V, Nb or Ta; m' = 9-18; and c = 0-84. The bleaching **compns.** according to the invention have good bleaching performance and can be used with or without a bleach activator, e.g. at low temps. Catalyst K6[Si(Co.H2O)W11O39] was prepared

IT **39292-26-7P 105785-76-0P 226422-93-1P**

226422-94-2P 226422-97-5P 226422-98-6P
226422-99-7P 226423-00-3P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(bleach catalyst; bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in laundering fabrics)

RN 39292-26-7 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:.kap pa.O':κO':κO':κO'':κO'':κO'':κ O''':κO''':κO''']]undecatungstate(5-) (5:1) (9CI) (CA INDEX NAME)

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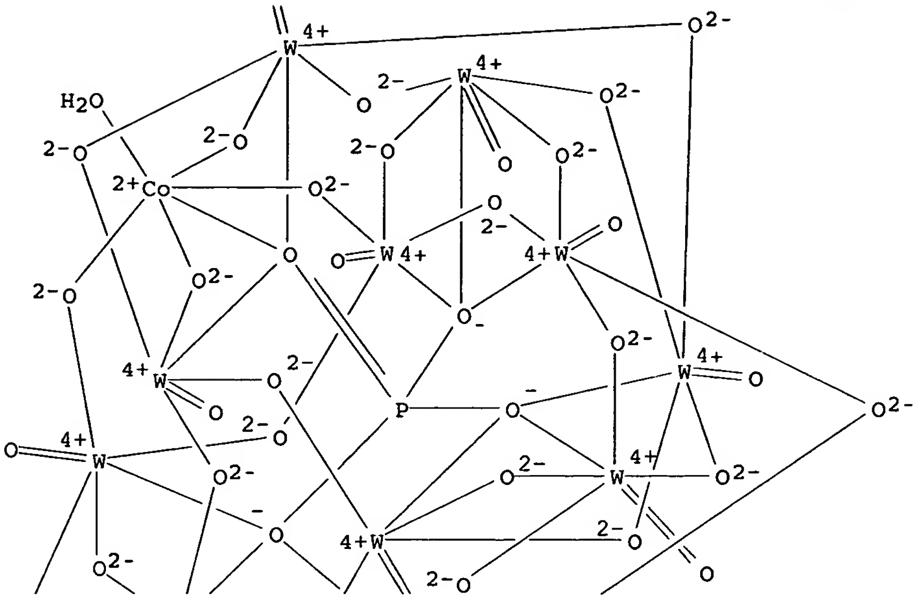
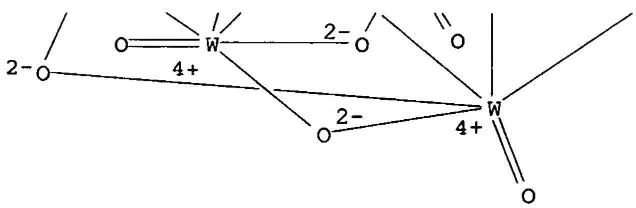
CRN 66258-00-2
CMF Co H2 O40 P W11
CCI CCS

PAGE 1-A

PAGE 2-A

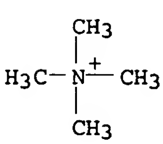


PAGE 3-A



CM 2

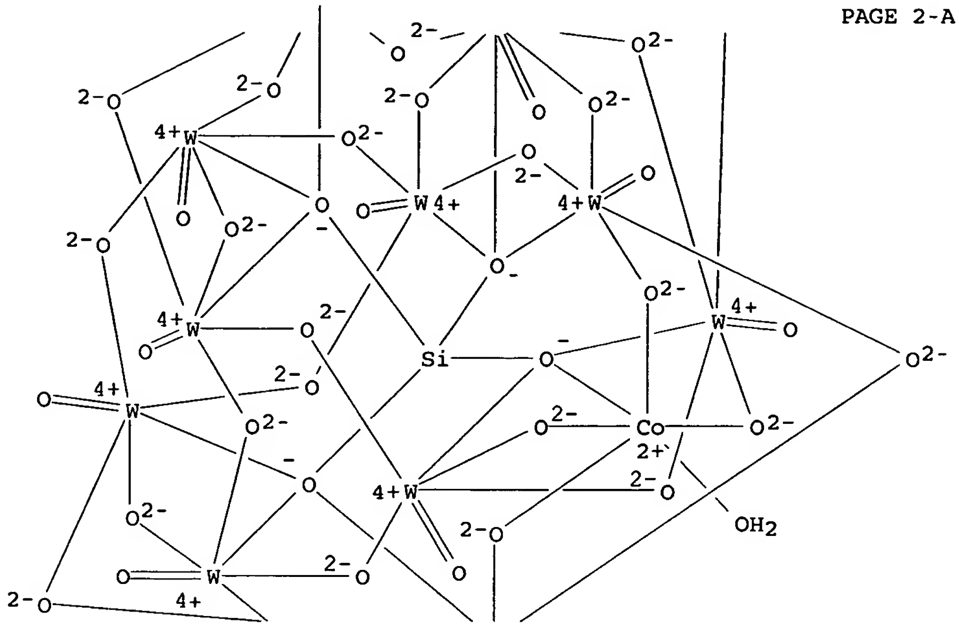
CRN 51-92-3
CMF C4 H12 N



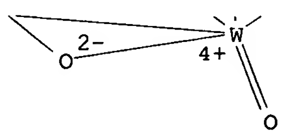
RN 105785-76-0 HCAPLUS
CN Tungstate(6-), (aquacobaltate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxoundecaoxoundeca-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

PAGE 2-A



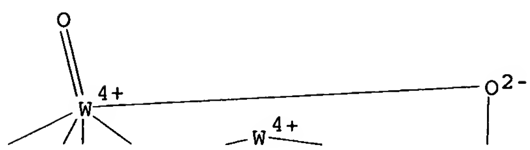
PAGE 3-A



●6 K^+

RN 226422-93-1 HCAPLUS
CN Tungstate(6-), (aquacobaltate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxoundecaoxoundeca-, tetrapotassium disodium (9CI) (CA INDEX NAME)

PAGE 1-A



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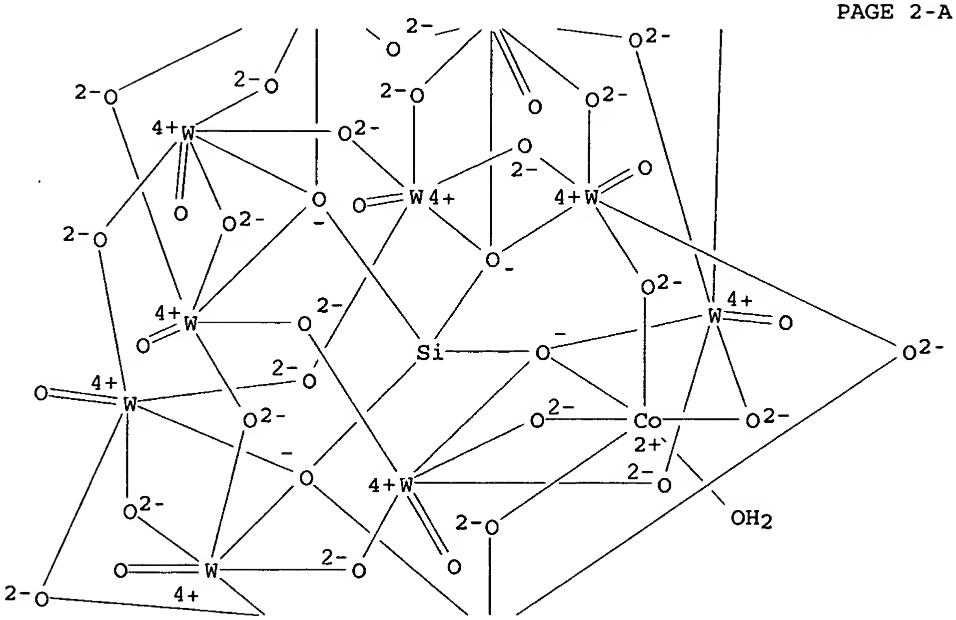

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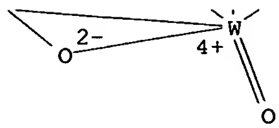


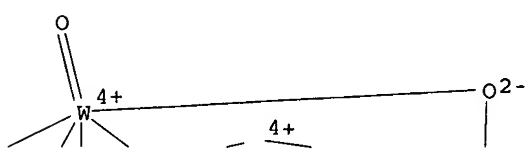
● 4 K^+

● 2 Na^+

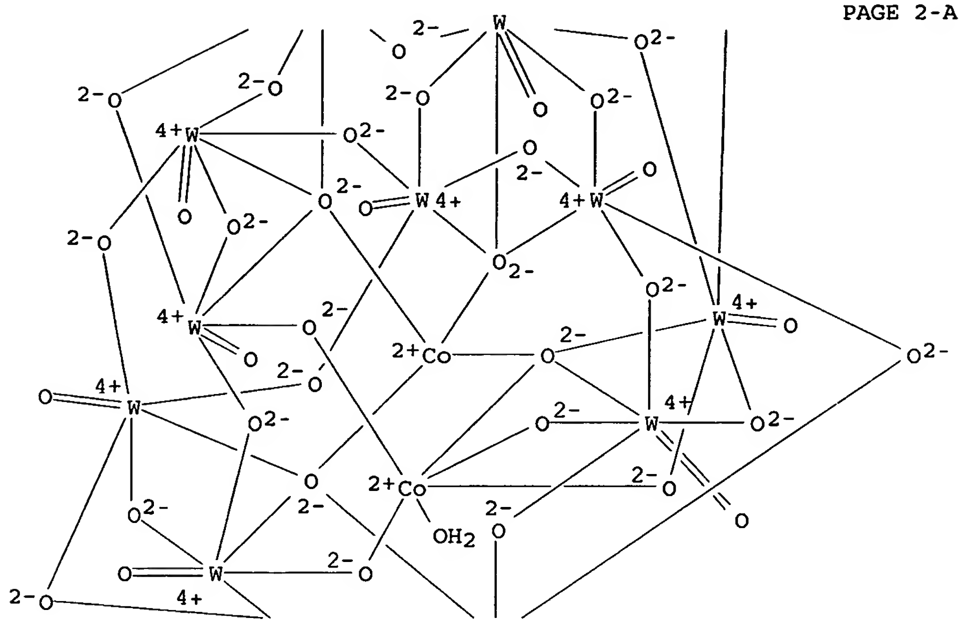
RN 226422-94-2 HCAPLUS

CN Tungstate(8-), (aquadicobaltate)tetracosa-μ-oxotetra-μ4-oxoundecaoxoundeca-, heptapotassium hydrogen (9CI) (CA INDEX NAME)

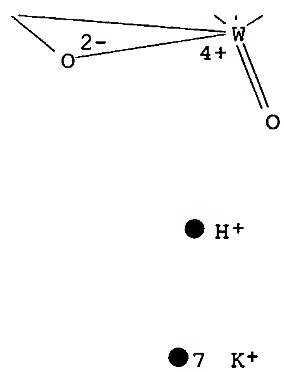
PAGE 1-A



PAGE 2-A



PAGE 3-A



RN 226422-97-5 HCAPLUS
CN Ethanaminium, N,N-diethyl-N-methyl-, (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:.kappa.O':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]undecatungstate(5-) (5:1) (9CI) (CA INDEX NAME)

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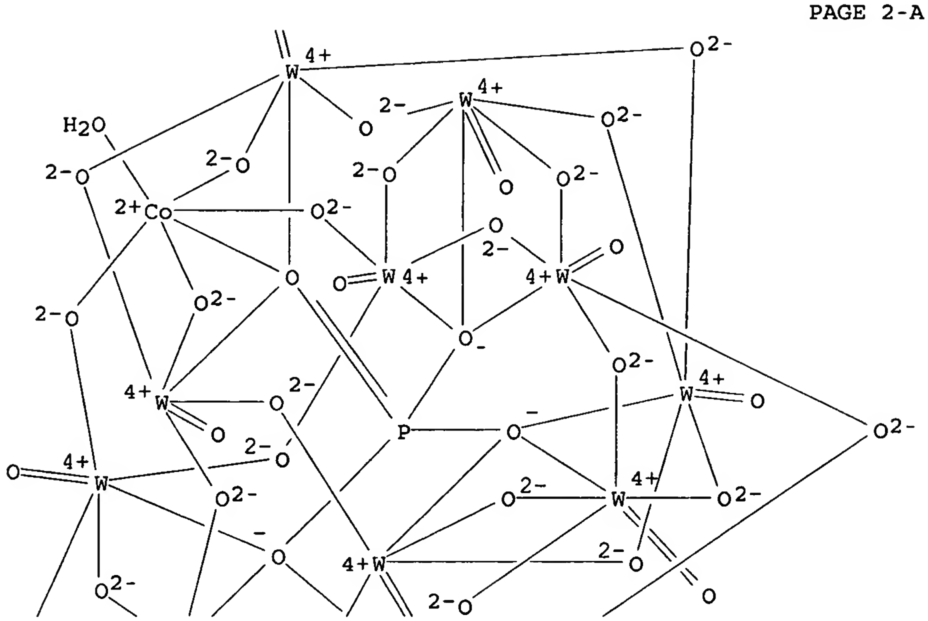
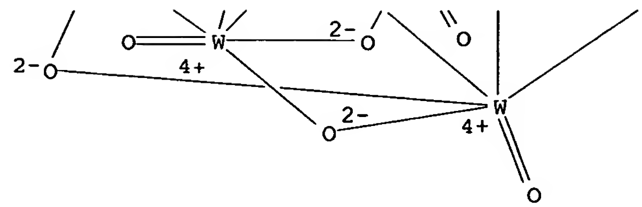
CRN 66258-00-2
CMF Co H2 O40 P W11
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A



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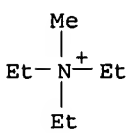
CRN 302-57-8
CMF C7 H18 N



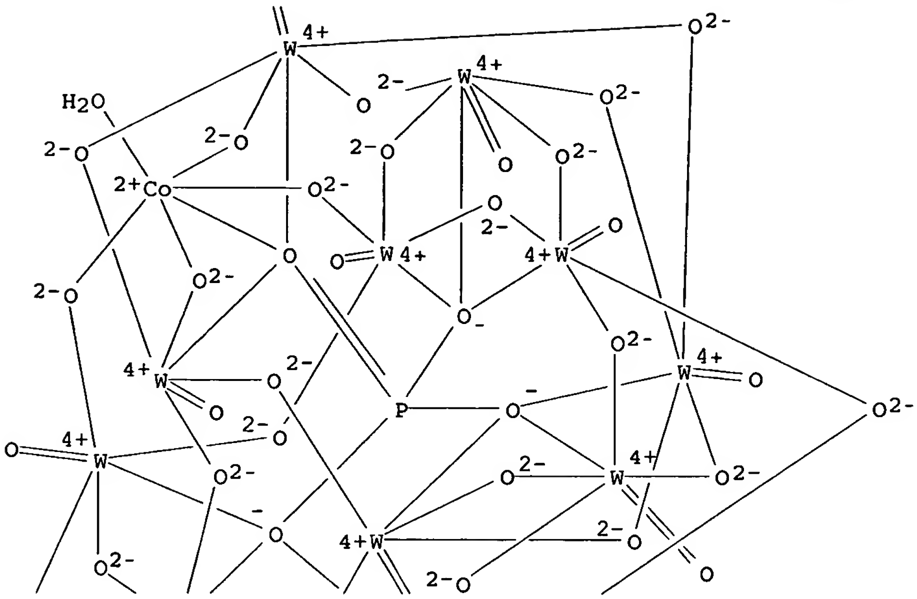
RN 226422-98-6 HCAPLUS
CN 1-Propanaminium, N,N,N-tripropyl-, (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:.kappa.O':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]undecatungstate(5-) (5:1) (9CI) (CA INDEX NAME)

CM 1

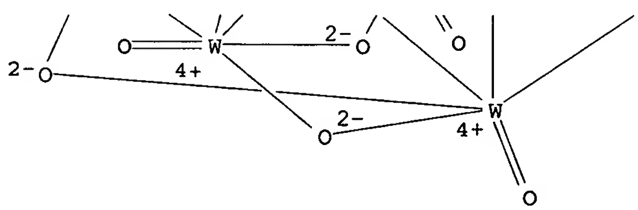
CRN 66258-00-2
CMF Co H2 O40 P W11
CCI CCS

PAGE 1-A

PAGE 2-A

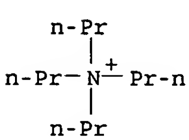


PAGE 3-A



CM 2

CRN 13010-31-6
CMF C12 H28 N



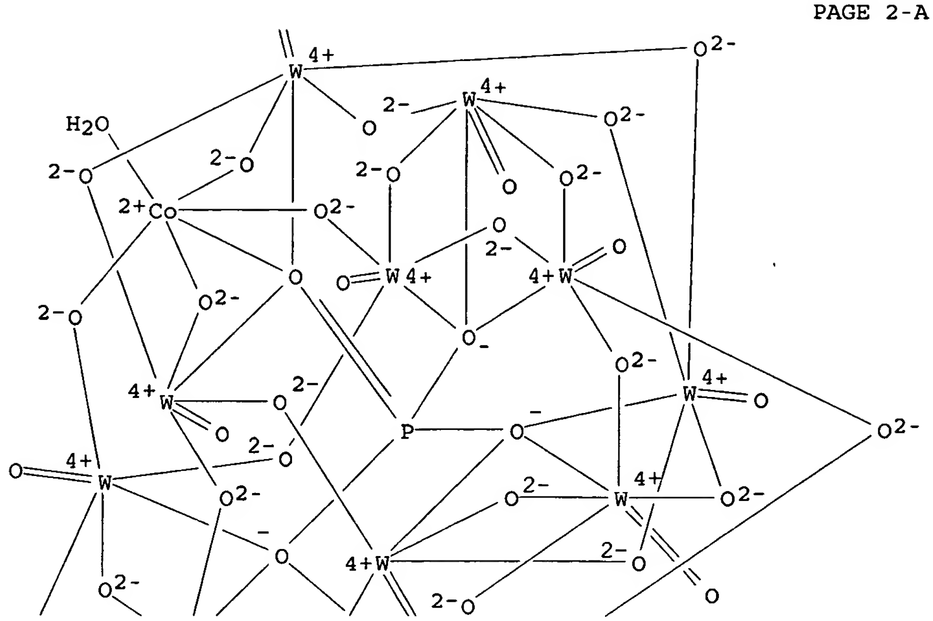
RN 226422-99-7 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:.kappa.O':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]undecatungstate(5-) (5:1) (9CI) (CA INDEX NAME)

CM 1

CRN 66258-00-2
CMF Co H2 O40 P W11
CCI CCS

PAGE 1-A

PAGE 2-A



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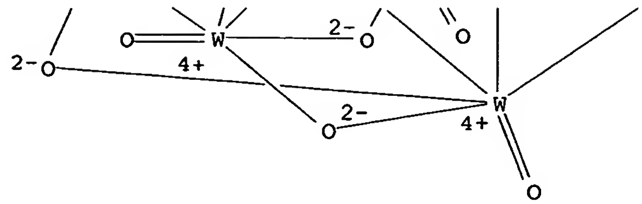
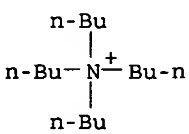


CM 2

CRN 10549-76-5
CMF C16 H36 N



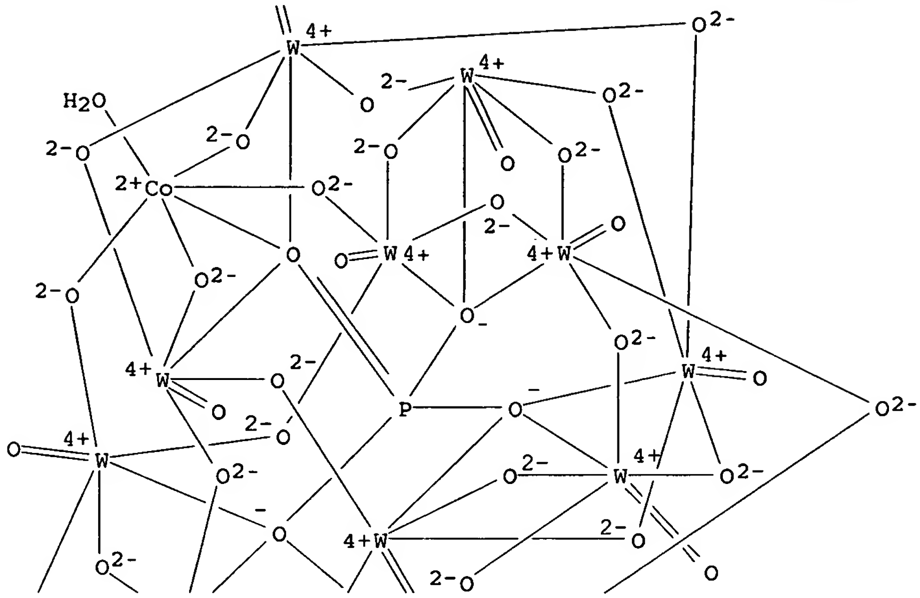
RN 226423-00-3 HCAPLUS
CN 1-Tetradecanaminium, N,N,N-trimethyl-, (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]undecatungstate(5-) (5:1) (9CI) (CA INDEX NAME)

CM 1

CRN 66258-00-2
CMF Co H2 O40 P W11
CCI CCS

PAGE 1-A

PAGE 2-A



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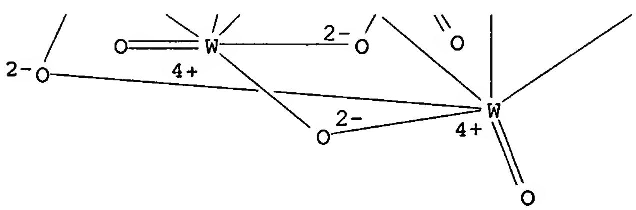


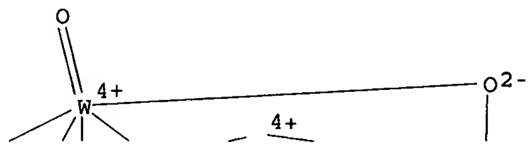
CM 2

CRN 10182-92-0
CMF C17 H38 N

$Me_3{}^+N-(CH_2)_{13}-Me$

IT **12027-38-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(in catalyst preparation; bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in laundering fabrics)
RN 12027-38-2 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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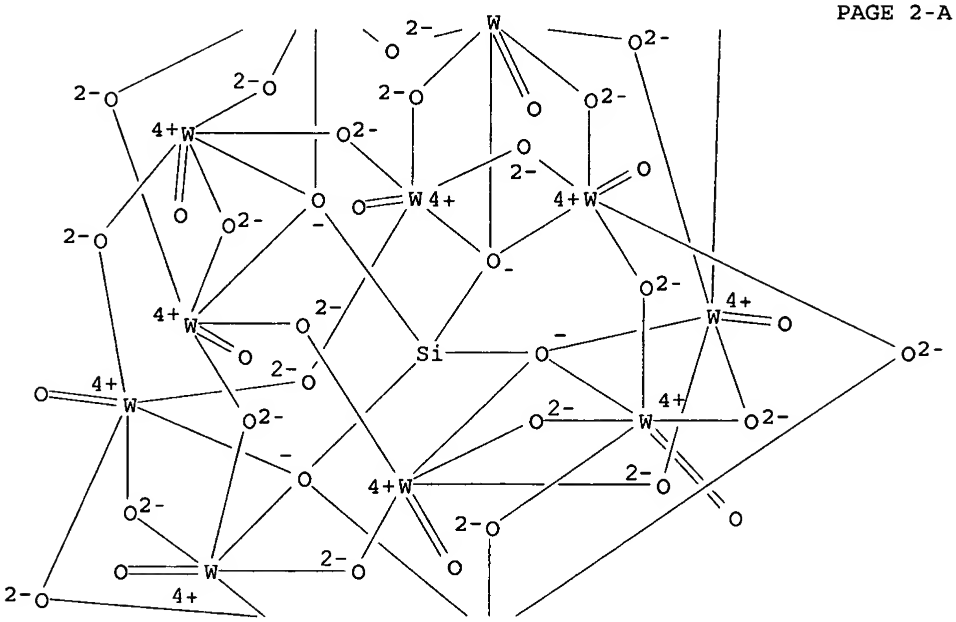

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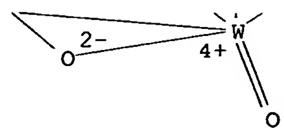


●4 H+

IC ICM C11D003-39
ICS C11D003-395
CC 46-5 (Surface Active Agents and Detergents)
Section cross-reference(s): 67
ST cobalt **polyoxometalate** bleach catalyst; detergent bleach **polyoxometalate** catalyst
IT Bleaching agents
Catalysts
(bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in laundering fabrics)
IT Detergents
(dishwashing; bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in)
IT Detergents
(laundry; bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in laundering fabrics)
IT **39292-26-7P 105785-76-0P 226422-93-1P**
226422-94-2P 226422-95-3P 226422-96-4P
226422-97-5P 226422-98-6P 226422-99-7P
226423-00-3P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(bleach catalyst; bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in laundering fabrics)
IT 3313-92-6, Sodium percarbonate 7722-84-1, Hydrogen peroxide, uses 11138-47-9, Sodium perborate
RL: TEM (Technical or engineered material use); USES (Uses)
(bleach; bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in laundering fabrics)
IT 64-20-0, Tetramethylammonium bromide 71-48-7, Cobalt (II) acetate 127-08-2, Potassium acetate 298-14-6, Potassium carbonate (KHCO3) 1643-19-2, Tetrabutylammonium bromide 1941-30-6, Tetrapropylammonium bromide 2700-16-5, Triethylmethylammonium bromide 2840-24-6, Trimethylammonium bromide **12027-38-2** 13472-45-2, Disodium tungstate 81205-57-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(in catalyst preparation; bleaching **compns.** containing cobalt **polyoxometalate** bleach catalyst in laundering fabrics)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 38 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:297315 HCAPLUS
DOCUMENT NUMBER: 130:332869
TITLE: **Polyoxometalate** antifiloviral **composition** containing a heteropolytungstate, and preparation thereof
INVENTOR(S): Matthews, Barry Ross; Holan, George
PATENT ASSIGNEE(S): Starpharma Limited, Australia
SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9921569	A1	19990506	WO 1998-AU880	19981023

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AU 9896163	A1	19990517	AU 1998-96163	19981023

PRIORITY APPLN. INFO.: AU 1997-9952 A 19971024
WO 1998-AU880 W 19981023

AB A method of prophylactic or therapeutic inhibition of Ebola virus and other filoviruses in a human or non-human animal patient is provided which comprises administering to the patient an effective amount of a heteropolytungstate selected from one of the following formulas: AnM1-4WqOr, AnYMXW11O39, An[(FeOA)4P2W18O68], An[Co(OH)3(H2O)6(HPO4)2(P3W27O102)], or AnP2W15O56 (A = cation; n = number of cations for elec. neutrality; Y = ligand; X = B, P, Si, Ge, Zn, Co, Fe, Ga, Ti, Zr, V, Cu; M = various metals or **combinations** thereof; q = 9-11, 15-18, 22, 30, 34; and r = 39, 40, 56, 62, 65, 68, 78, 102, 112, 122). Preparation of heteropolytungstate compds. is described.

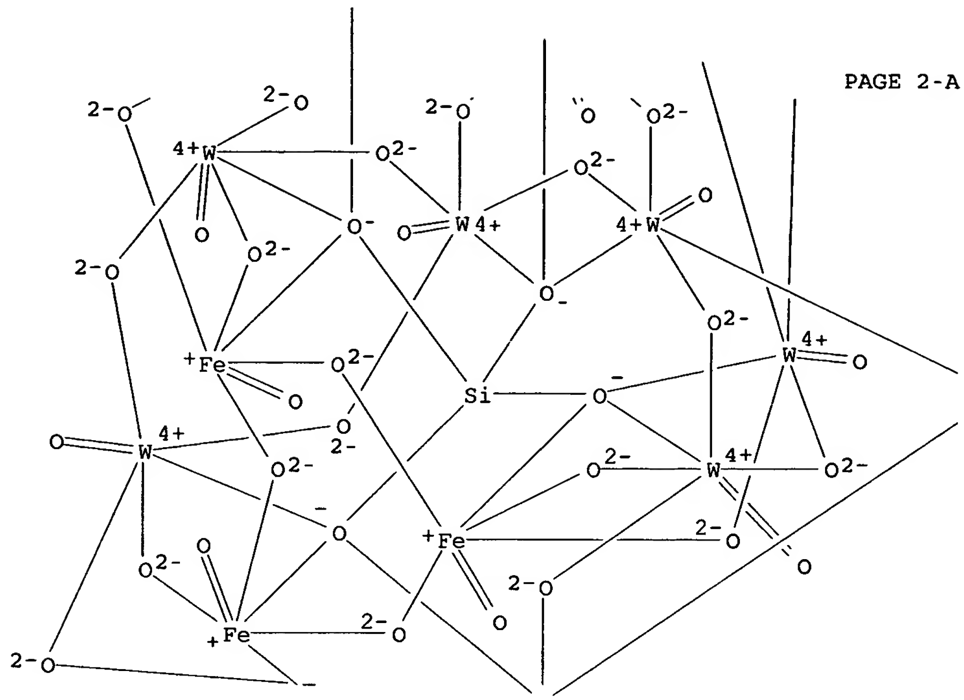
IT **152313-58-1**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)

RN 152313-58-1 HCAPLUS

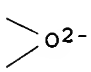
CN Tungstate(13-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]henei cosa-μ-oxononaoxo(tri-μ-oxotrioxotriferrate)nona-, hexapotassium heptahydrogen (9CI) (CA INDEX NAME)

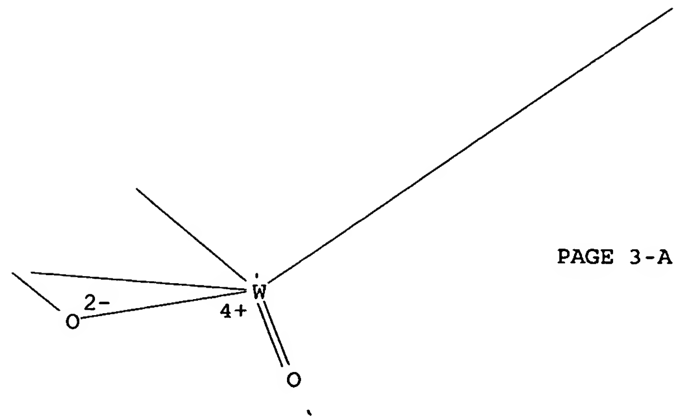
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 2-B





PAGE 3-A

●7 H^+

●6 K^+

IC ICM A61K033-42
ICS A61K033-34; A61K033-32; A61K033-30; A61K033-26; A61K033-24
CC 1-5 (**Pharmacology**)
Section cross-reference(s): 63, 78
ST virucide filovirus heteropolytungstate prepn; **polyoxometalate** virucide filovirus; Ebola virus virucide heteropolytungstate prepn
IT Drug delivery systems
(4polyoxometalate antifiloviral **composition** containing heteropolytungstate, and preparation thereof)
IT Fever and Hyperthermia
(hemorrhagic, viral; **polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)
IT Antiviral agents
Drug screening
Ebola virus
Filovirus
Marburg virus
(**polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)
IT Heteropoly acids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)
IT Heteropoly acids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tungstates; **polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)
IT Drugs
(veterinary; **polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)
IT 81553-24-4P 84750-84-5P 110717-64-1P 152444-40-1P 179160-07-7P, Iron potassium tungsten oxide phosphate ($Fe_4K_{12}W_{16}O_{57}(PO_4)_2$)

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)

IT **152313-58-1** 152444-39-8 152444-41-2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)

IT 63950-57-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)

IT 59111-46-5P 93240-37-0P 110743-41-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction; **polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)

IT 497-19-8, Carbonic acid disodium salt, reactions 7447-40-7, Potassium chloride, reactions 7601-89-0, Sodium perchlorate 7773-01-5, Manganese dichloride 10141-05-6, Cobalt dinitrate 10421-48-4, Ferric nitrate 13138-45-9, Nickel dinitrate 13472-45-2, Disodium tungstate 13598-36-2, Phosphorous acid, reactions 110697-84-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction; **polyoxometalate** antifiloviral **composition** containing heteropolytungstate, and preparation thereof)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 39 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:684433 HCAPLUS
DOCUMENT NUMBER: 129:339856
TITLE: Method, **compositions**, and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections
INVENTOR(S): Schinazi, Raymond F.; Hill, Craig L.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 18 pp., Cont.-in-part of U.S. Ser. No. 312,561, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5824706	A	19981020	US 1995-399700	1995 0303
WO 9609764	A1	19960404	WO 1995-US11961	1995 0926

W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,

GN, ML, MR, NE, SN, TD, TG

	AU 9536366	A1	19960419	AU 1995-36366	19950926
	US 6020369	A	20000201	US 1998-111275	19980707
PRIORITY APPLN. INFO.:				US 1994-312561 B2	19940926
				US 1995-399700 A	19950303
				WO 1995-US11961 W	19950926

AB Respiratory viral infections may be effectively prevented or treated by administering an aerosol spray comprising a **polyoxometalate** to the lungs. (Me3NH)5TaSiW11O40 had a selectivity index greater than 300 when evaluated in HIV-1 acutely infected primary human PBM cells and had no cytotoxicity to uninfected human PBM cells when evaluated up to 100 μM.

IT **11078-54-9 12027-38-2D**, solid solution with ammonium analog **12045-18-0 12297-12-0 12297-12-0D**, solid solns. with ammonium analog and protonated amino acid analog **77981-80-7D**, solid solution with tetrahydrogen analog **81552-97-8 82679-05-8 83721-03-3 84303-03-7 84303-05-9 101144-77-8 112763-08-3 112763-08-3D**, solid solution with tetrahydrogen analog **119390-04-4 129572-46-9 131359-48-3 131541-68-9 131541-69-0 131541-70-3 132460-56-1 132460-57-2 132460-58-3 138026-47-8 139631-93-9 139631-95-1 139631-96-2 139631-98-4 139632-00-1 141483-63-8 162958-09-0 162958-11-4 162958-14-7 162958-20-5 189277-29-0 189823-27-6 194150-76-0 215594-65-3D**, solid solution with histidine or lysine analog **215594-66-4D**, solid solution with sodium analog **215594-72-2 215594-74-4 215594-76-6 215594-80-2 215594-81-3 215594-82-4 215594-83-5 215594-86-8 215594-90-4 215594-91-5 215594-93-7 215594-95-9 215594-98-2 215595-02-1 215595-06-5 215595-09-8 215595-11-2 215595-19-0 215595-21-4 215595-22-5D**, solid solution with sodium analog **215595-24-7 215601-32-4**

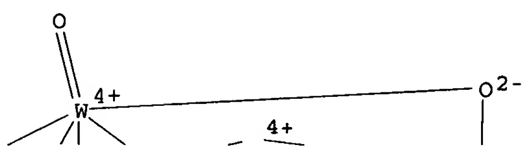
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)

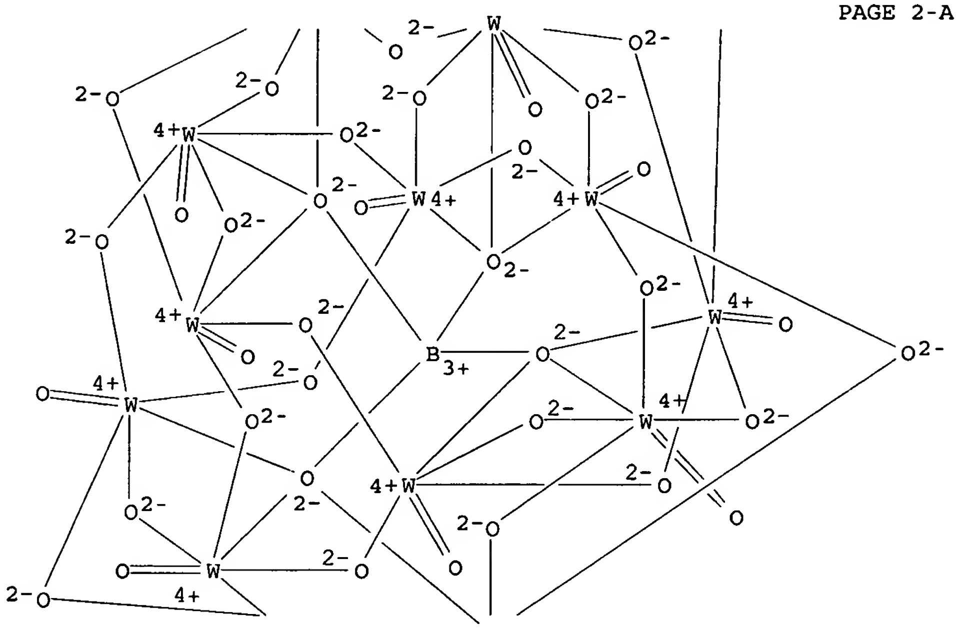
RN 11078-54-9 HCAPLUS

CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]dodeca-, pentapotassium (9CI) (CA INDEX NAME)

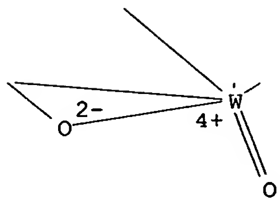
PAGE 1-A



PAGE 2-A



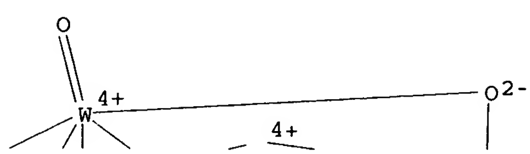
PAGE 3-A



●5 K^+

RN 12027-38-2 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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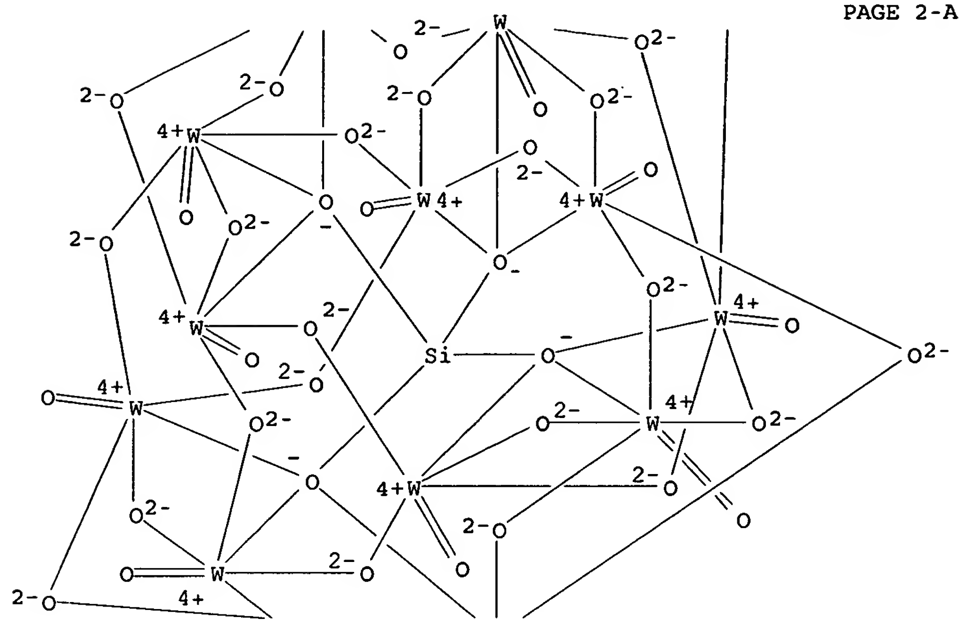

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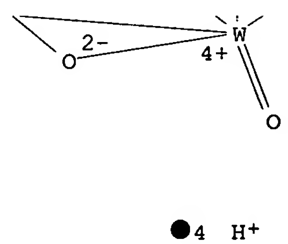
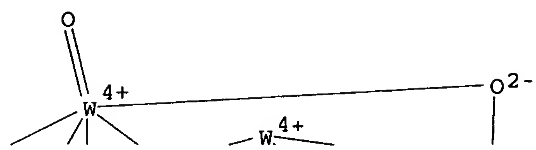
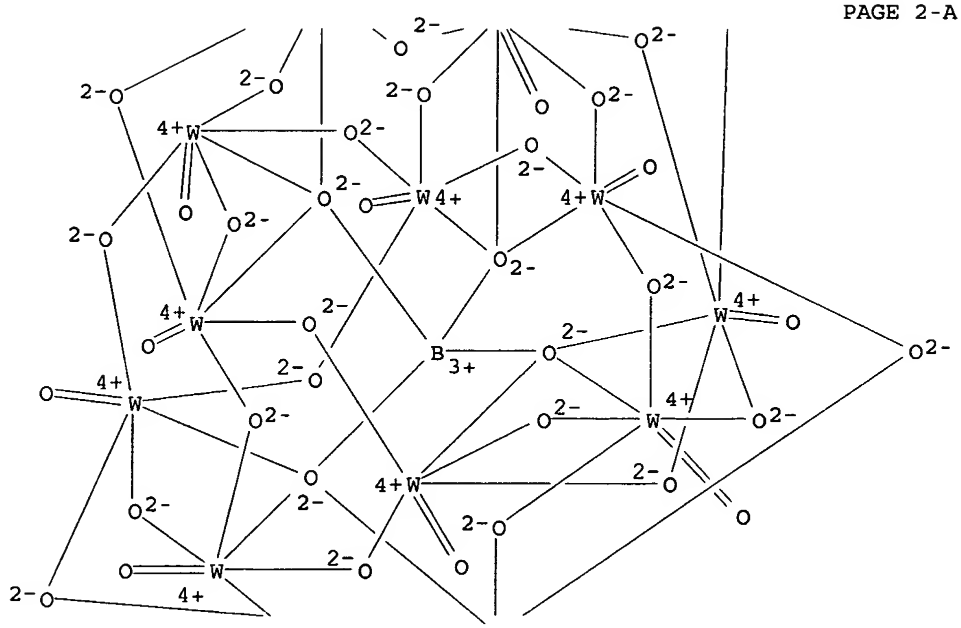


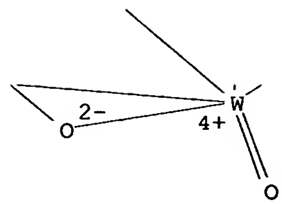
RN 12045-18-0 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]dodeca-, pentasodium (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A





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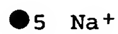
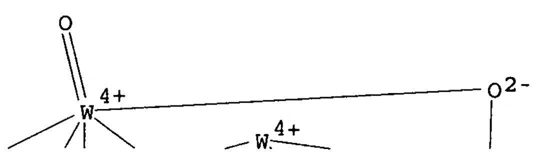
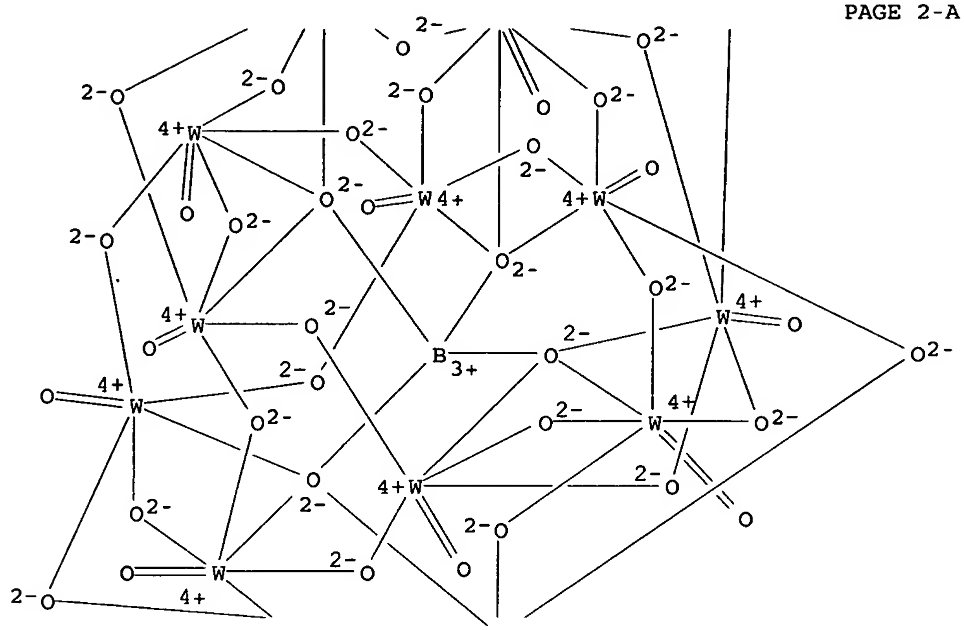


RN 12297-12-0 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]dodeca-, pentahydrogen (9CI) (CA INDEX NAME)

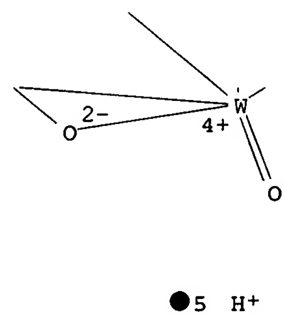
PAGE 1-A



PAGE 2-A

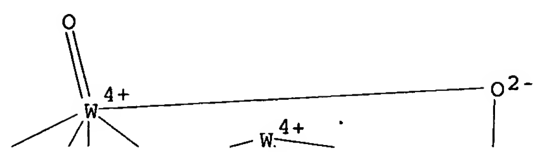


PAGE 3-A



RN 12297-12-0 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]dodeca-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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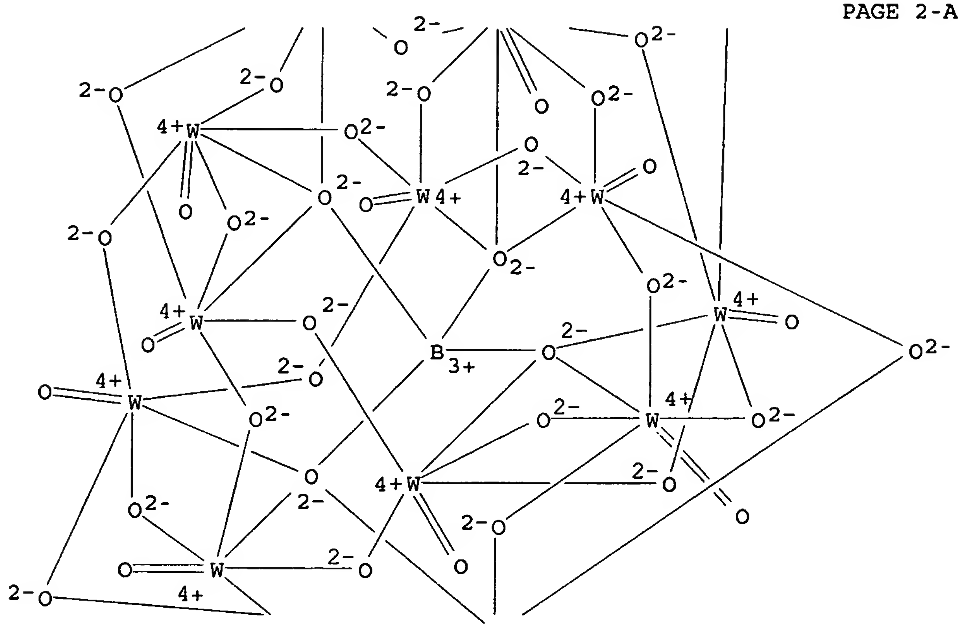

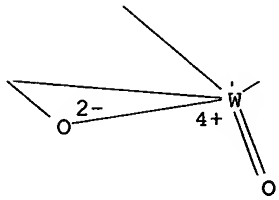

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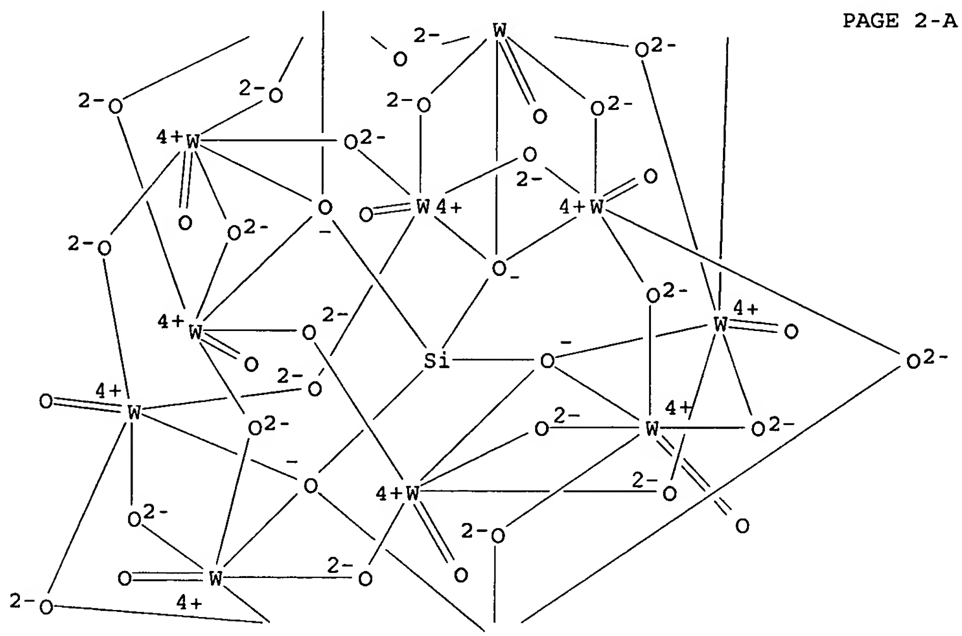
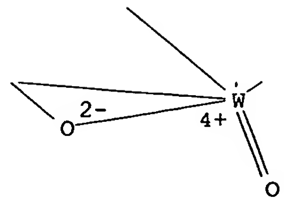
RN 77981-80-7 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetraammonium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●4 NH_4^+

RN 81552-97-8 HCAPLUS
CN Tungstate(6-), (aquagallate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]undeca-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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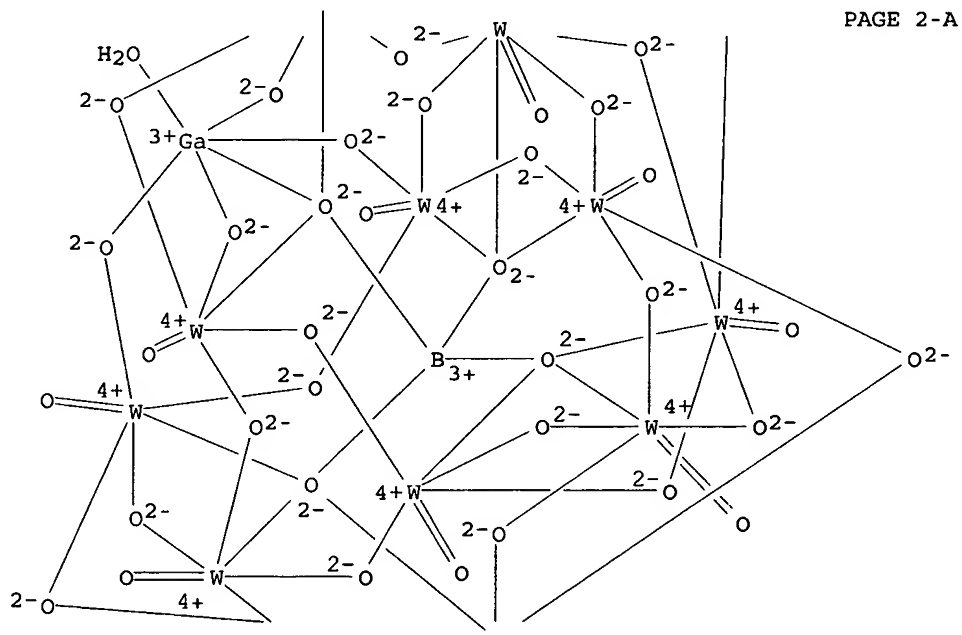
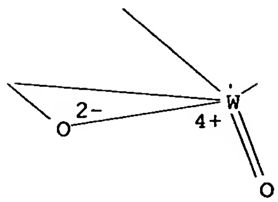


PAGE 3-A



RN 82679-05-8 HCAPLUS
CN Tungstate(6-), tetracosa-μ-oxotetra-μ4-oxododecaoxozincatedodeca-, hexahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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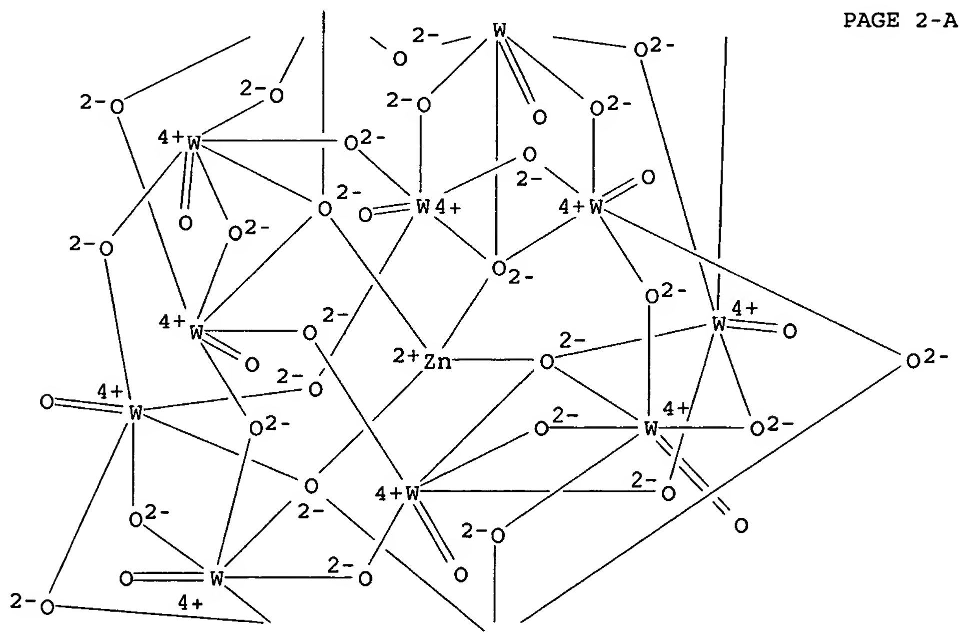

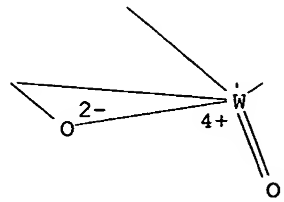

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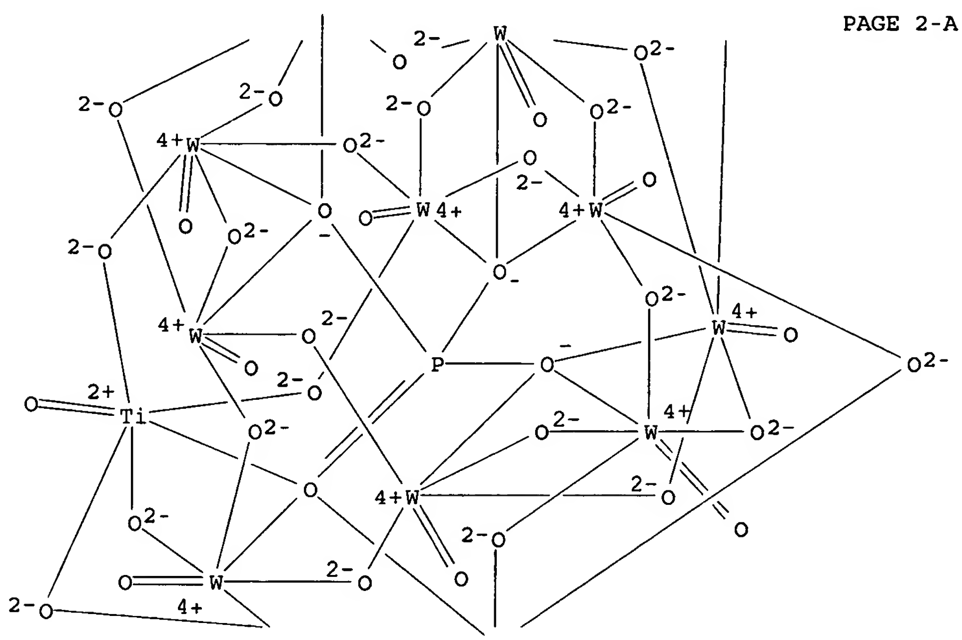
● 6 H^+

RN 83721-03-3 HCAPLUS
CN Titanate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, pentacesium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



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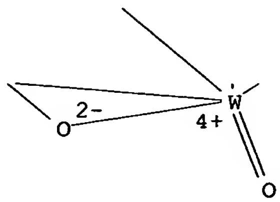

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● 5 Cs^+

RN 84303-03-7 HCAPLUS
CN Titanate(7-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, heptacesium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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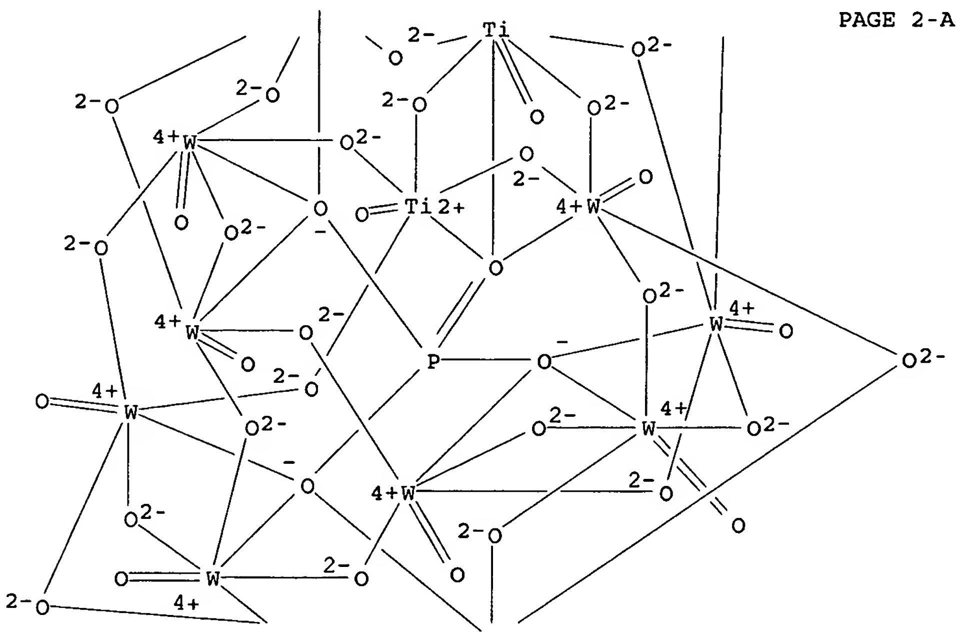

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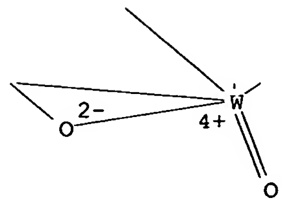

●7 Cs^{+}

RN 84303-05-9 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dititanate(7-) (7:1) (9CI) (CA INDEX NAME)

CM 1

CRN 84303-04-8
CMF O40 P Ti2 W10
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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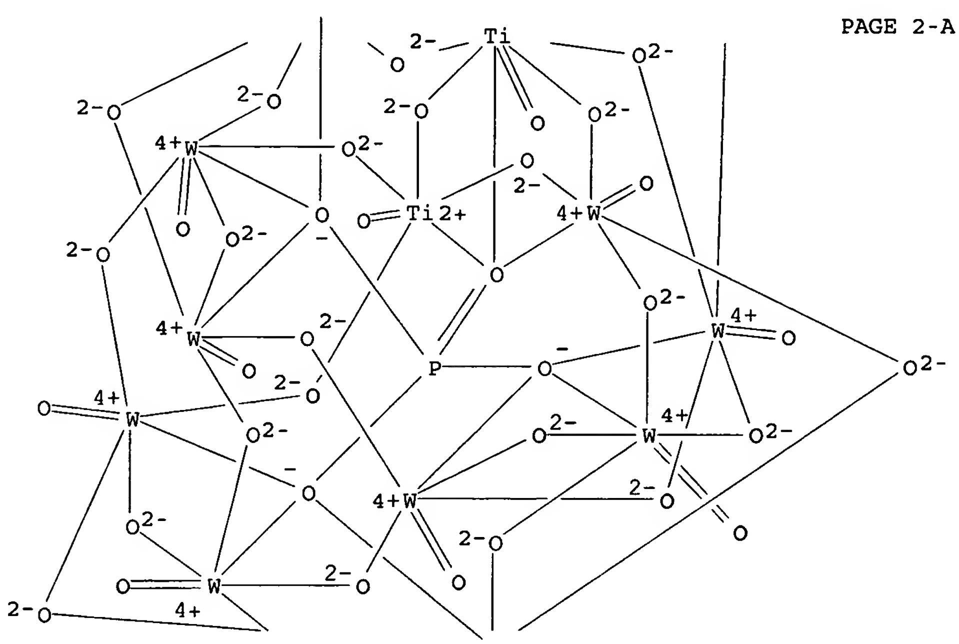

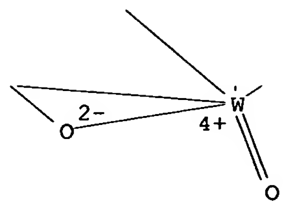

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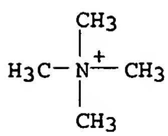
CM 2

CRN 51-92-3
CMF C4 H12 N



RN 101144-77-8 HCAPLUS
CN Vanadate(9-), [heptacosa-μ-oxopentadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'',κO'':κO''':κO''']]pentadecatungstate]nona-μ-oxotrioxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]tri-, octapotassium hydrogen (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 112763-08-3 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]dodeca-, pentaammonium (9CI) (CA INDEX NAME)

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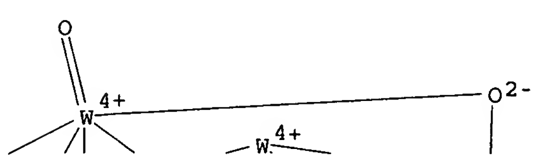

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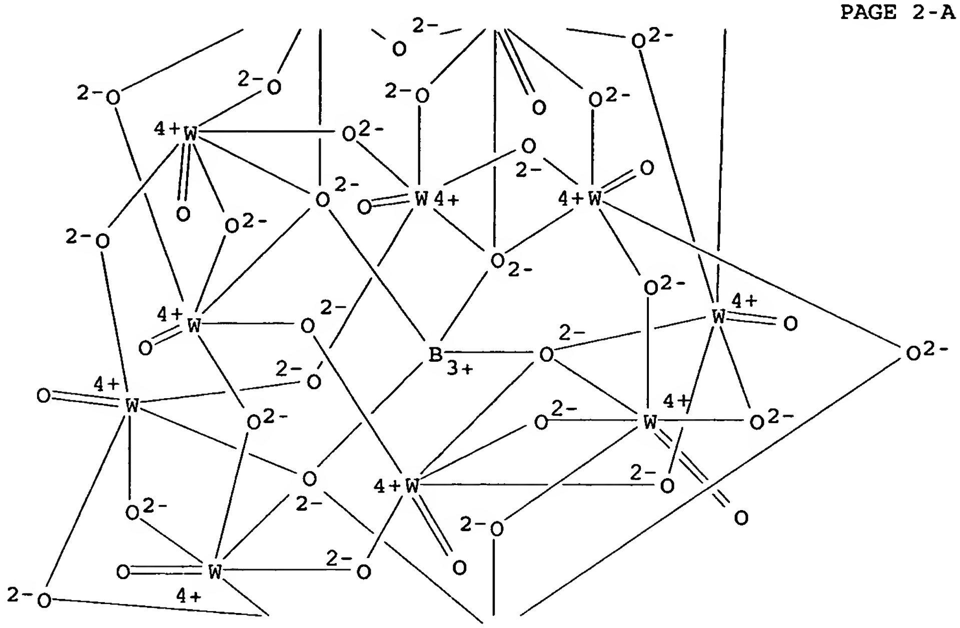

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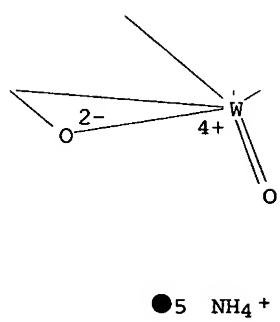

RN 112763-08-3 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]dodeca-, pentaammonium (9CI) (CA INDEX NAME)

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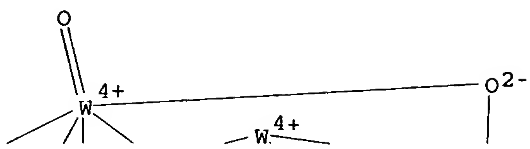
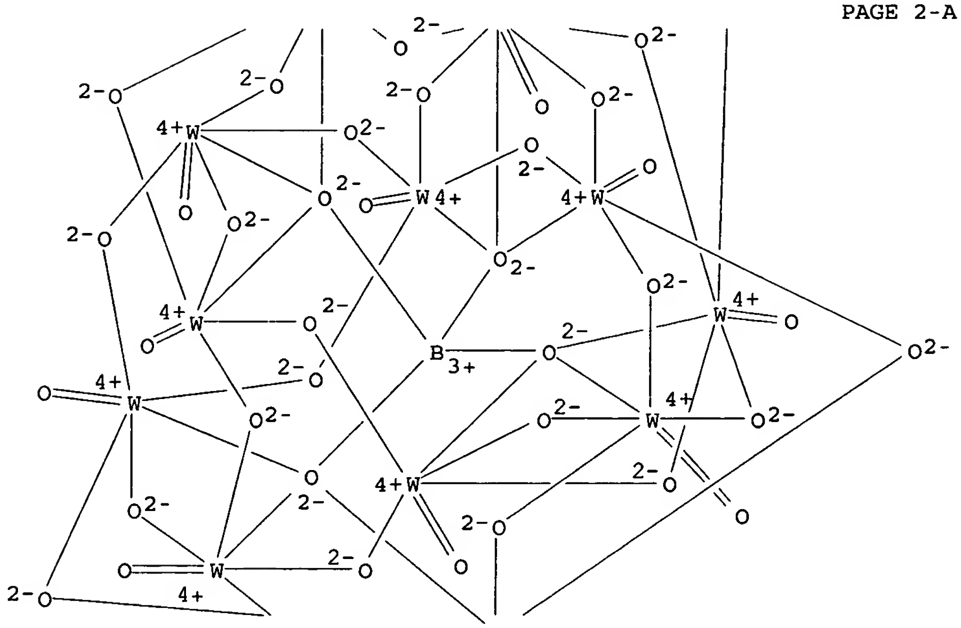
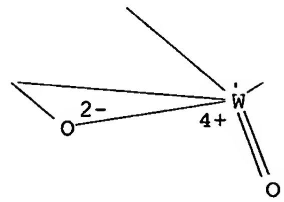


PAGE 2-A





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●5 NH_4^+

RN 119390-04-4 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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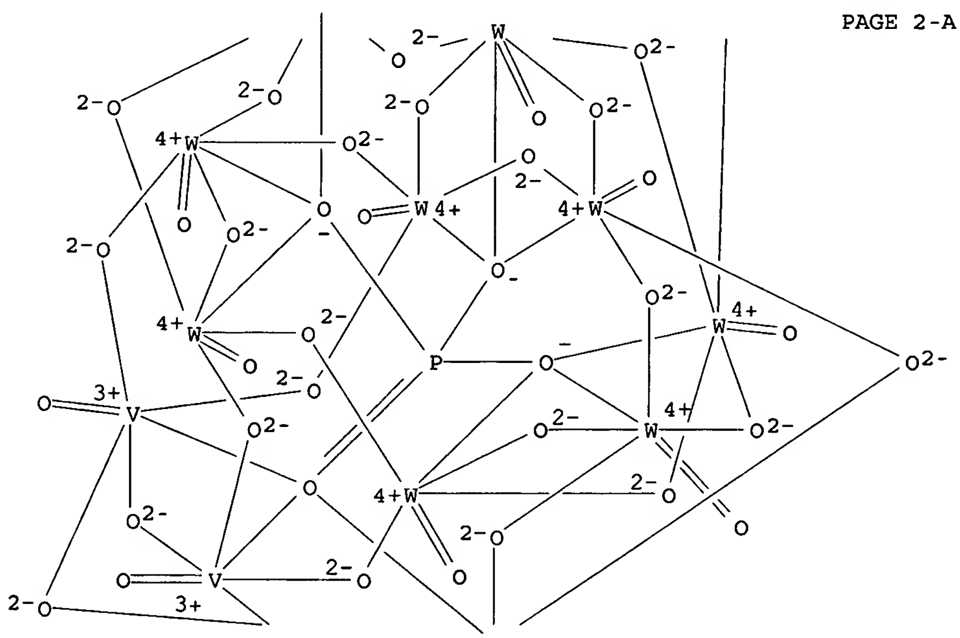

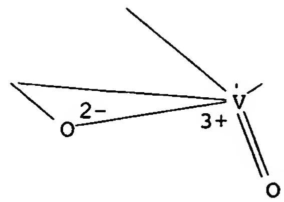

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RN 129572-46-9 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen, compd. with N,N-dimethylacetamide (1:3) (9CI) (CA INDEX NAME)

CM 1

CRN 12026-57-2
CMF H . 1/3 Mo12 O40 P
CCI CCS

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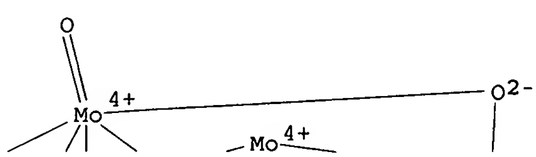

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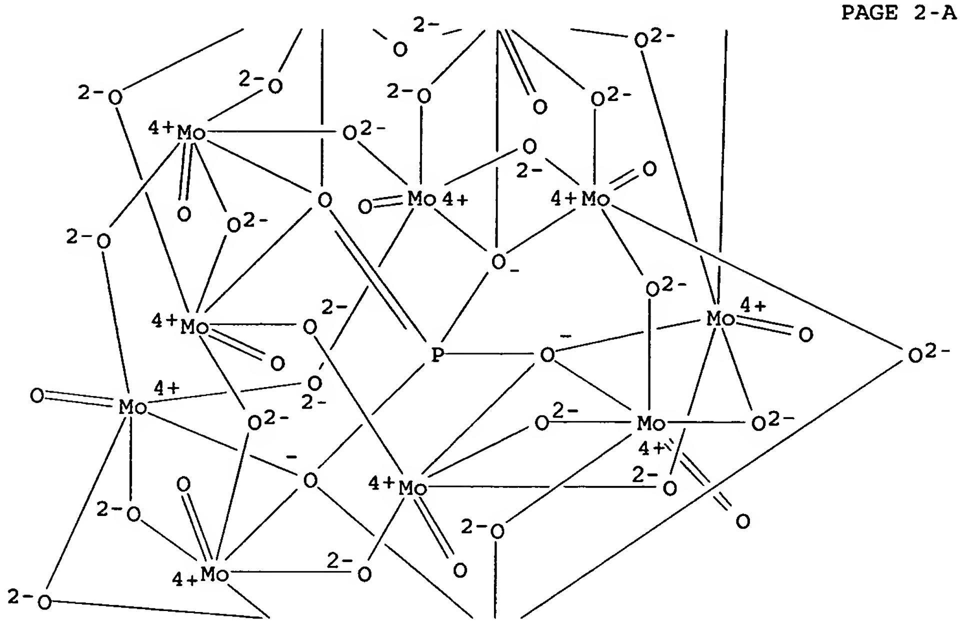

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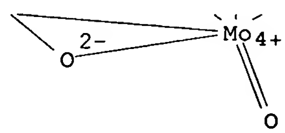
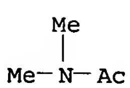


CM 2

CRN 127-19-5
CMF C4 H9 N O



RN 131359-48-3 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]dodeca-, pentahydrogen (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 131541-68-9 HCAPLUS
CN L-Lysine, tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodecatungstate(5-) (9CI) (CA INDEX NAME)

CM 1

CRN 12297-12-0
CMF B O40 W12 . 5 H
CCI CCS

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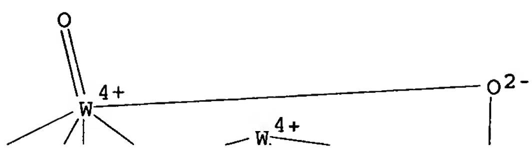

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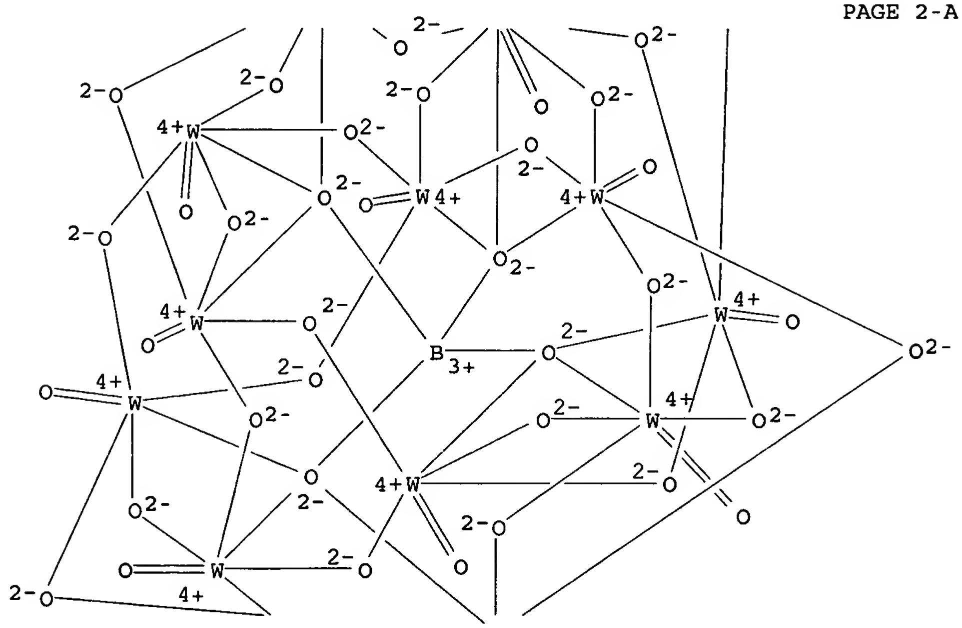

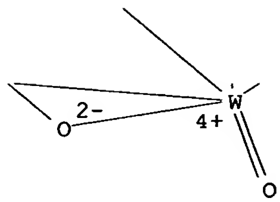

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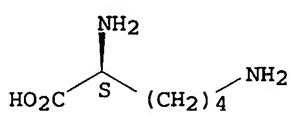
●5 H+

CM 2

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 131541-69-0 HCAPLUS
CN L-Arginine, tetracosa-μ-oxododecaoxo[μ12-
[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp
a.O':κO':κO'':κO'':κO'':κO''':.kappa
.O''':κO''']]dodecatungstate(5-) (9CI) (CA INDEX NAME)

CM 1

CRN 12297-12-0
CMF B O40 W12 . 5 H
CCI CCS

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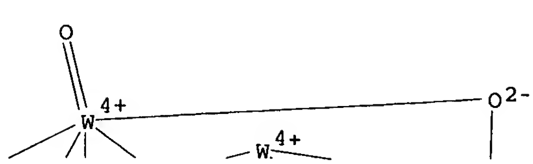

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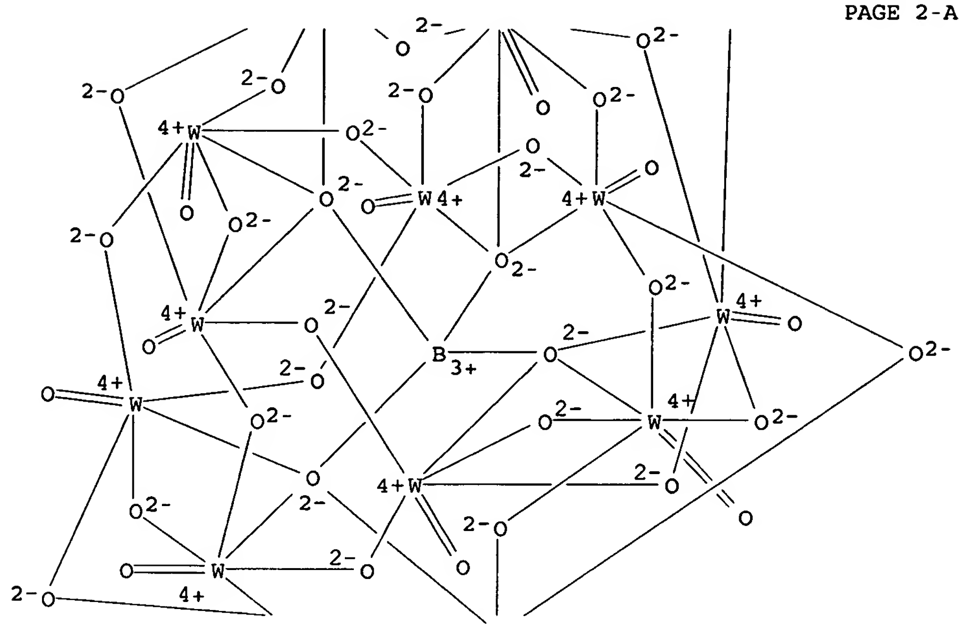

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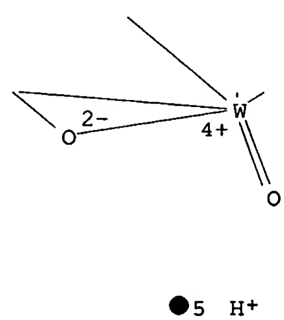
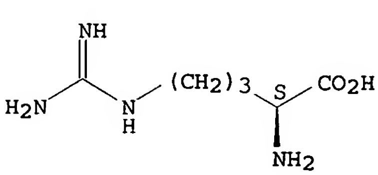


CM 2

CRN 74-79-3
CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 131541-70-3 HCAPLUS
CN L-Histidine, tetracosa-μ-oxododecaoxo[μ12-

[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']dodecatungstate(5-) (9CI) (CA INDEX NAME)

CM 1

CRN 12297-12-0
CMF B O40 W12 . 5 H
CCI CCS

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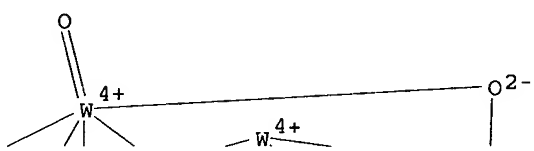

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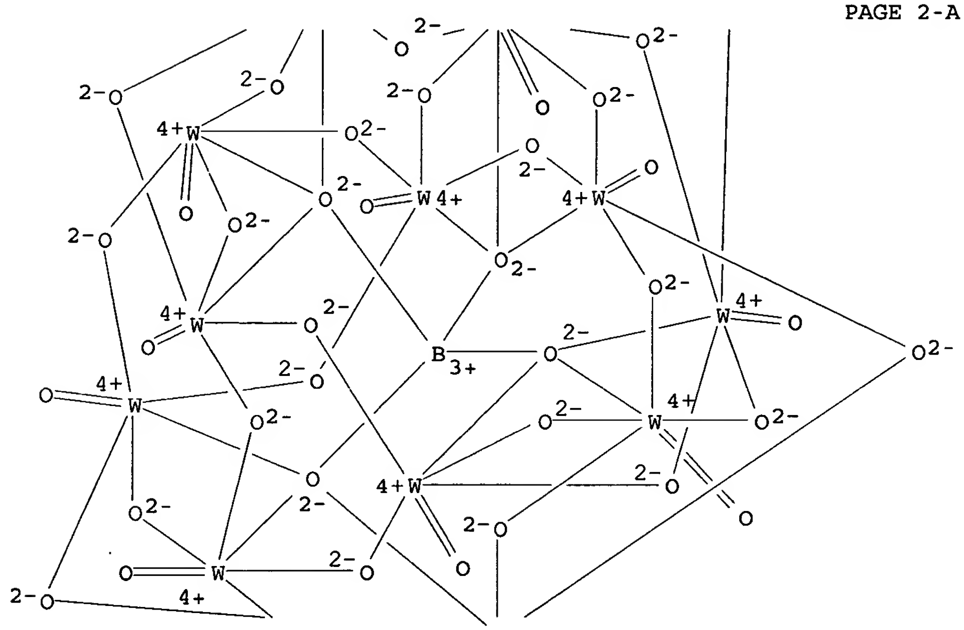

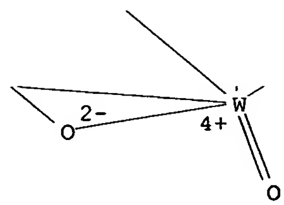

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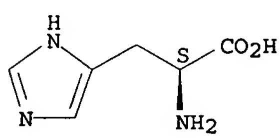
CM 2

CRN 71-00-1
CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).



RN 132460-56-1 HCAPLUS
CN L-Lysine, [μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxododecaoxododecatungstate(4-) (9CI) (CA INDEX NAME)

CM 1

CRN 12027-38-2
CMF H . 1/4 O40 Si W12
CCI CCS

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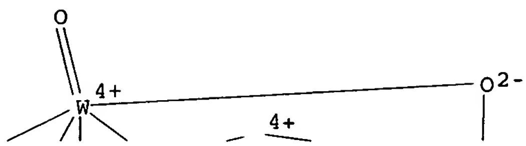

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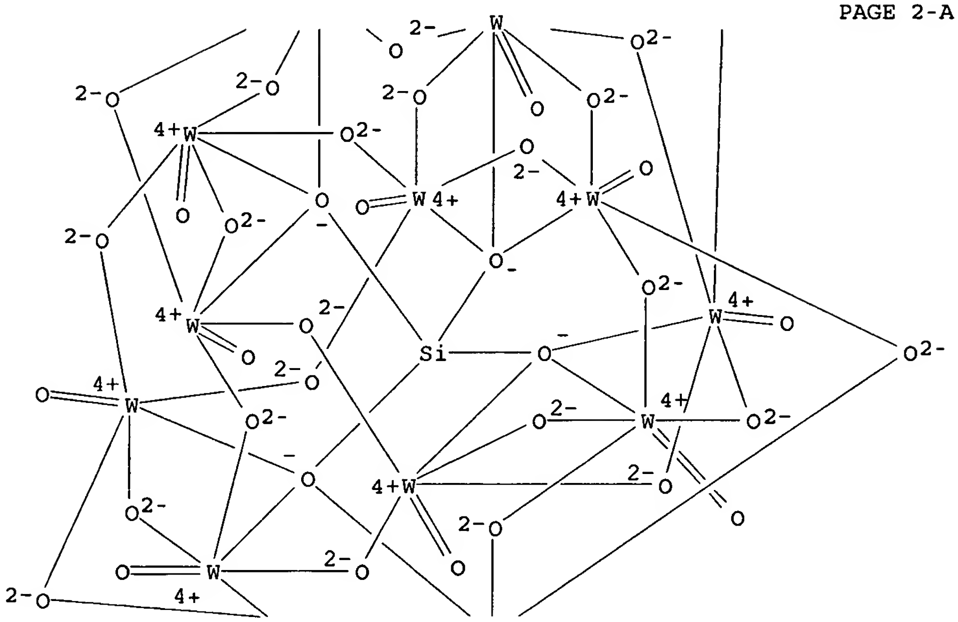

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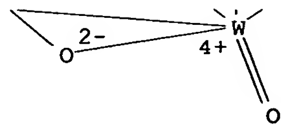
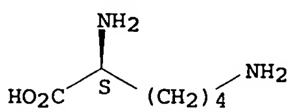


●4 H+

CM 2

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 132460-57-2 HCAPLUS
CN L-Arginine, [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]tetra
cosa-μ-oxododecaoxododecatungstate(4-) (9CI) (CA INDEX NAME)

CM 1

CRN 12027-38-2
CMF H . 1/4 O40 Si W12
CCI CCS

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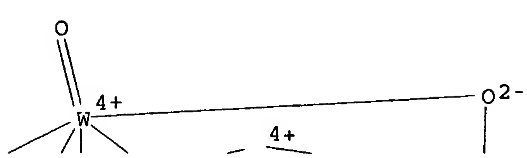

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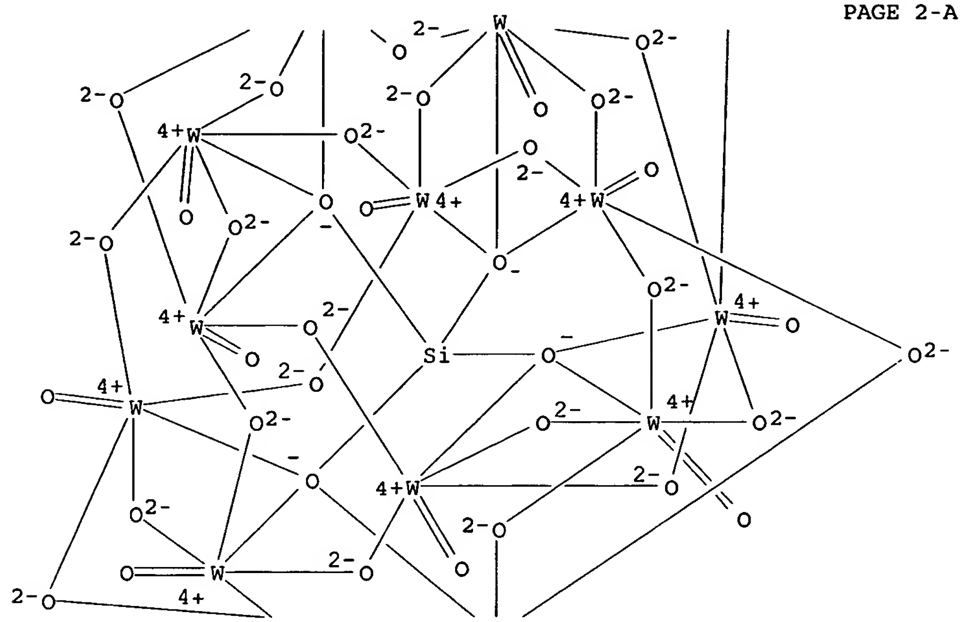

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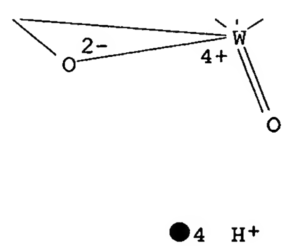
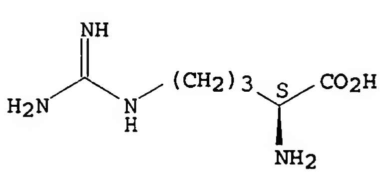


CM 2

CRN 74-79-3
CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 132460-58-3 HCAPLUS
CN L-Histidine, [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododecatungstate(4-) (9CI) (CA INDEX NAME)

CM 1

CRN 12027-38-2
CMF H . 1/4 O40 Si W12
CCI CCS

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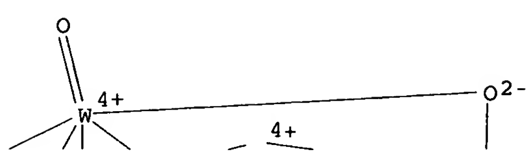

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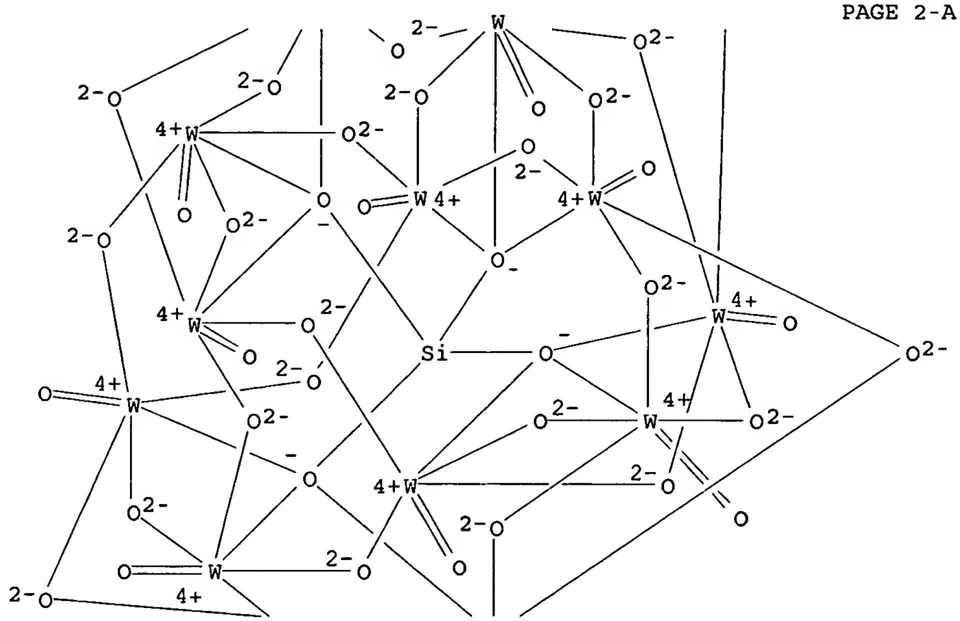
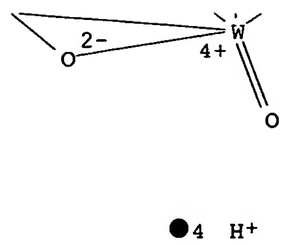


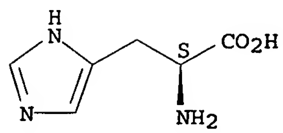
PAGE 3-A



CM 2

CRN 71-00-1
CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).

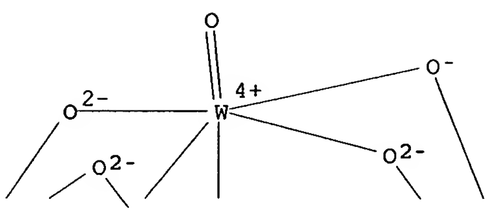


RN 138026-47-8 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-diethenyl-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1:κO3:κO3]][μ11-[orthosilicato(4-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''']]eicosa-μ-oxoundecaoxoundecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

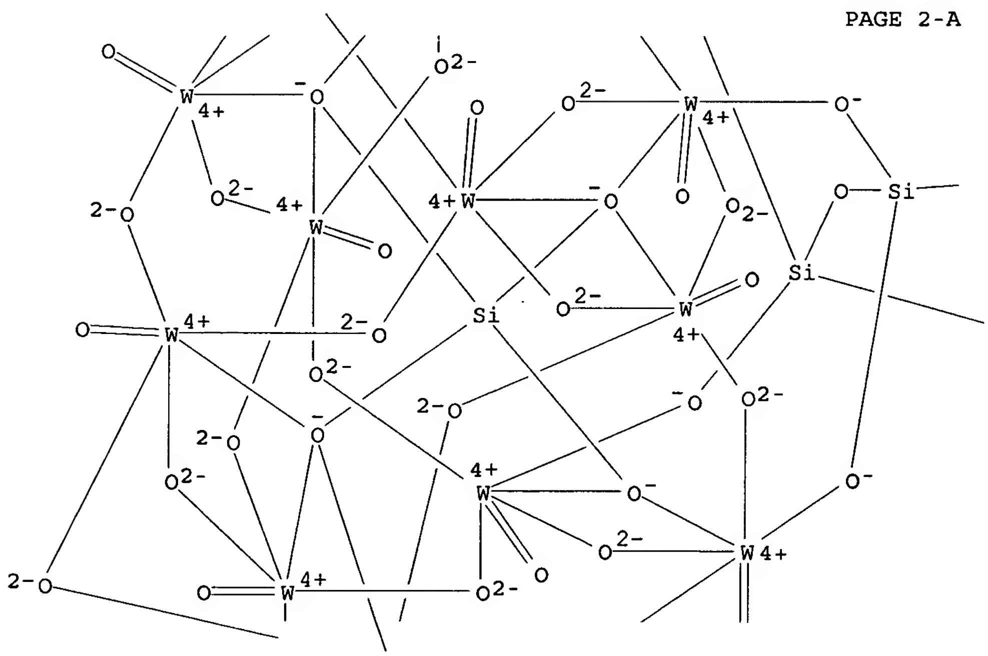
CM 1

CRN 137880-55-8
CMF C4 H6 O40 Si3 W11
CCI CCS

PAGE 1-A



PAGE 2-A



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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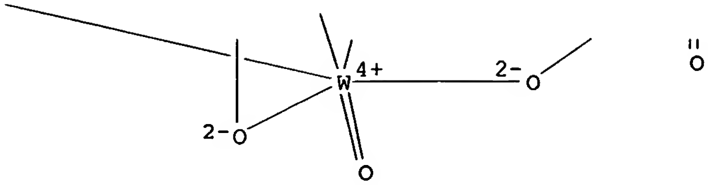
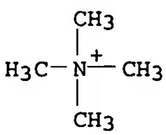


CM 2

CRN 51-92-3
CMF C4 H12 N



RN 139631-93-9 HCAPLUS
CN Tungstate(4-), [μ11-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''']]eicosa-μ-
oxoundecaoxo[μ4-[[4,4'-[1,1,3,3-tetra(hydroxy-κO)-1,3-
disiloxanediyl]bis[butanenitrilato]](4-)]]undeca-, tetracesium
(9CI) (CA INDEX NAME)

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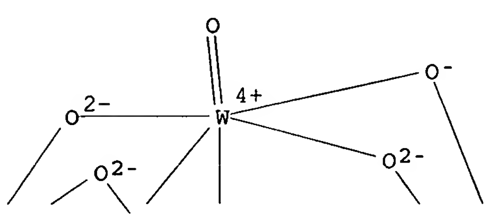
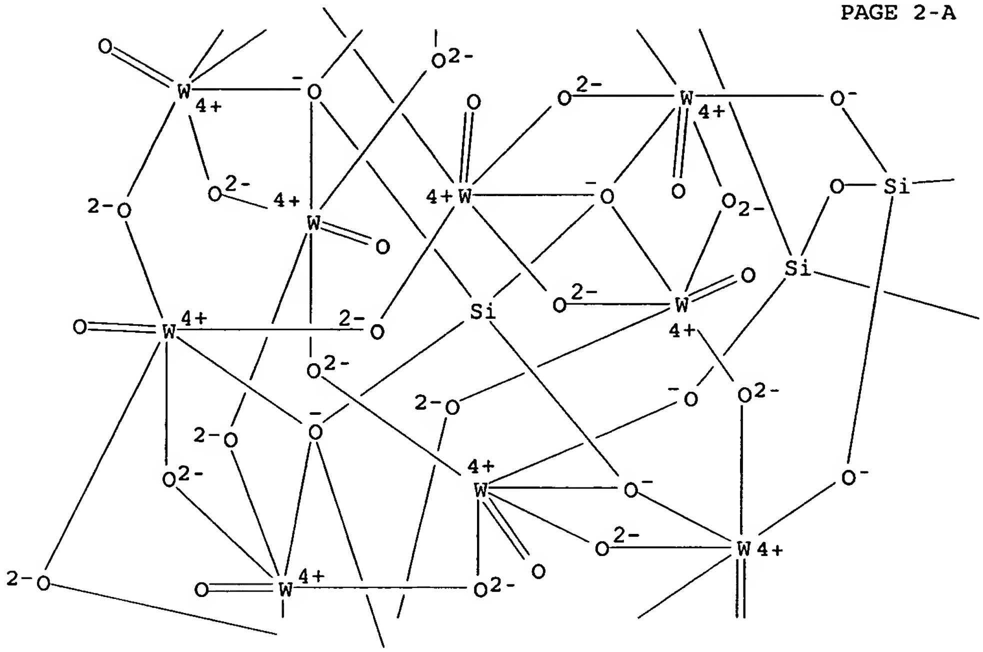


PAGE 2-A



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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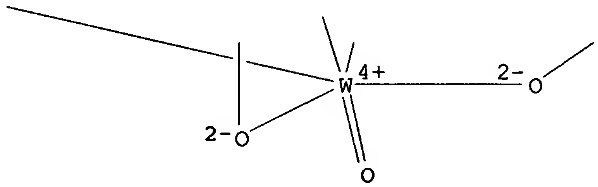


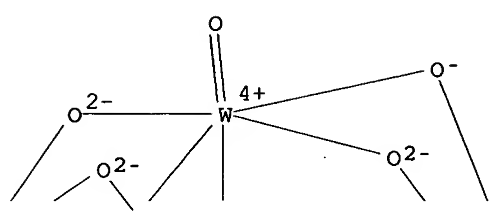
●4 Cs^+

RN 139631-95-1 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ11-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''']]eicosa-μ-oxoundecaoxo[μ4-[[4,4'-[1,1,3,3-tetra(hydroxy-κO)-1,3-disiloxanediyl]bis[butanenitrilato]](4-)]]undecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

CM 1

CRN 139631-94-0
CMF C8 H12 N2 O40 Si3 W11
CCI CCS

PAGE 1-A



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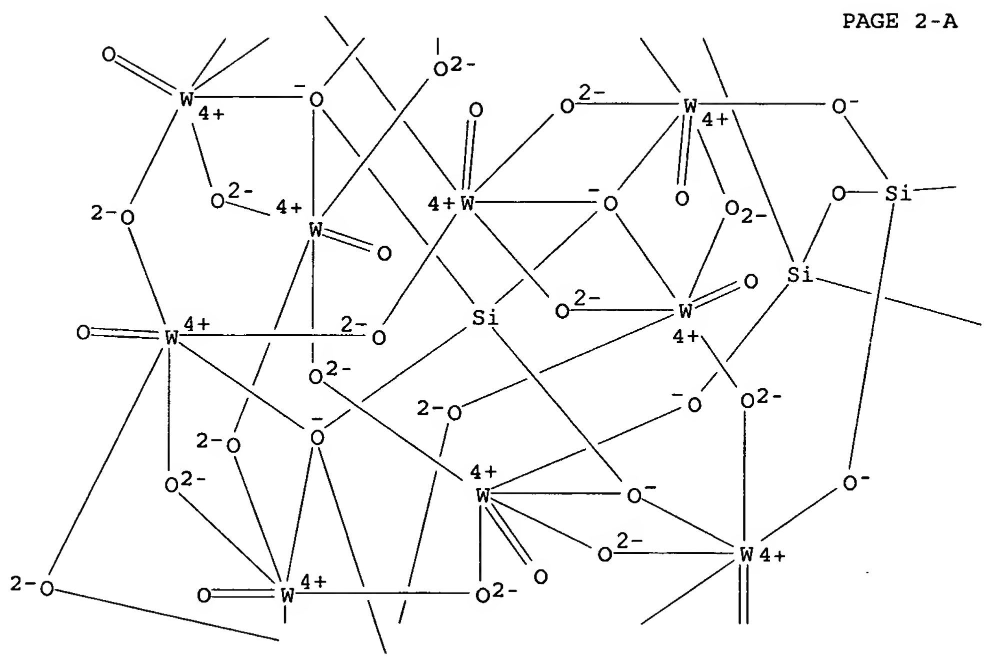

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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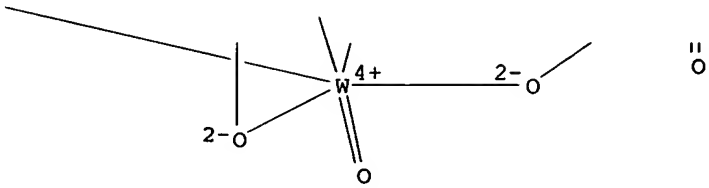

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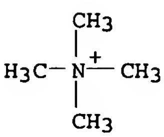
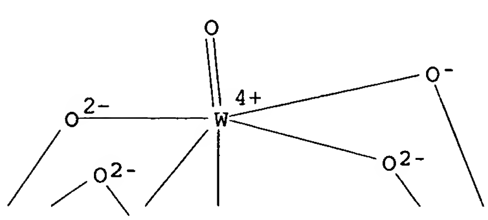
CM 2

CRN 51-92-3
CMF C4 H12 N

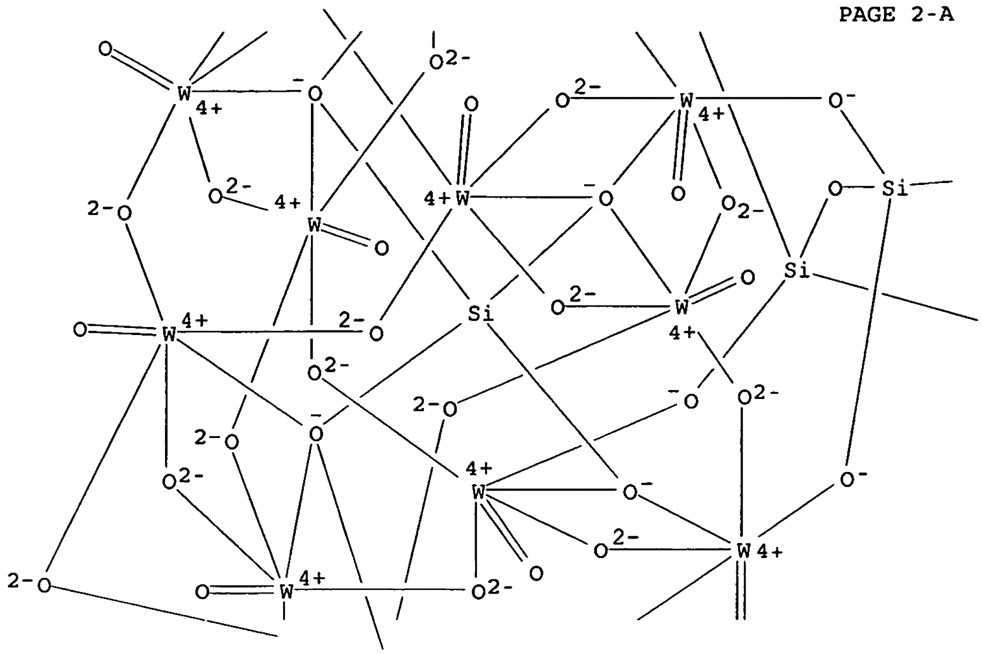


RN 139631-96-2 HCAPLUS
CN Tungstate(4-), [μ4-[1,3-diethenyl-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']][μ11-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''']]eicosa-μ-oxoundecaoxoundeca-, tetracesium (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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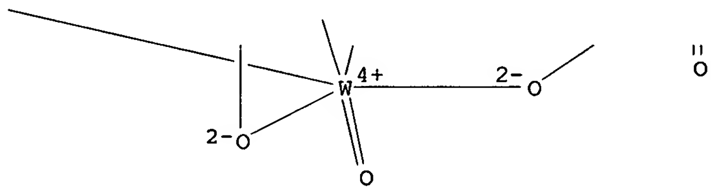

●4 Cs^+

RN 139631-98-4 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-diethyl-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']][μ11-[orthosilicato(4-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''']]eicosa-μ-oxoundecaoxoundecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

CM 1

CRN 139631-97-3
CMF C4 H10 O40 Si3 W11
CCI CCS

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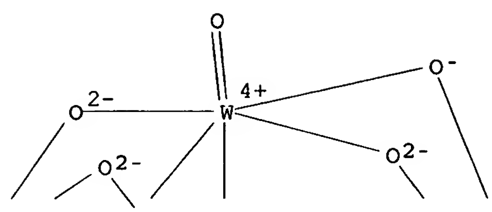
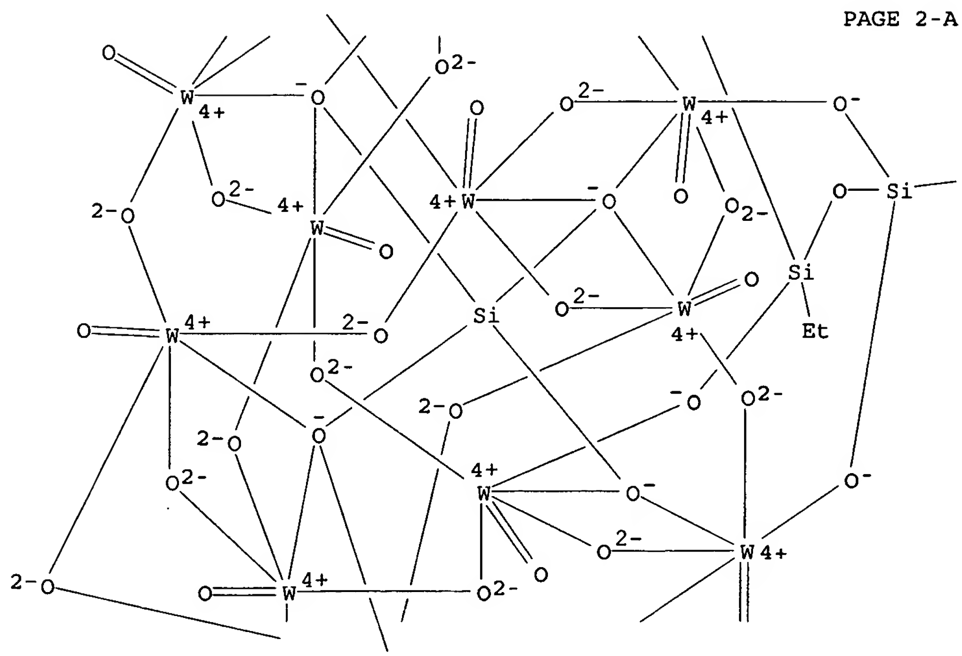


PAGE 2-A



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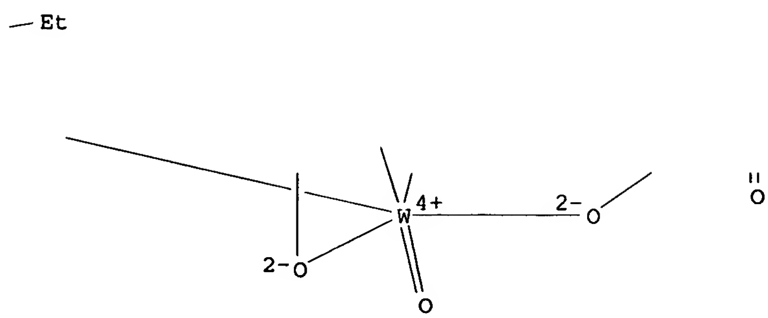

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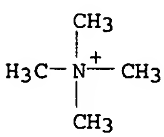
CM 2

CRN 51-92-3
CMF C4 H12 N



RN 139632-00-1 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-dimethyl-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']][μ11-[orthosilicato(4-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''']]eicosa-μ-oxoundecaoxoundecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

CM 1

CRN 139631-99-5
CMF C2 H6 O40 Si3 W11
CCI CCS

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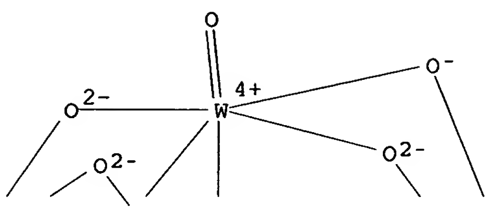

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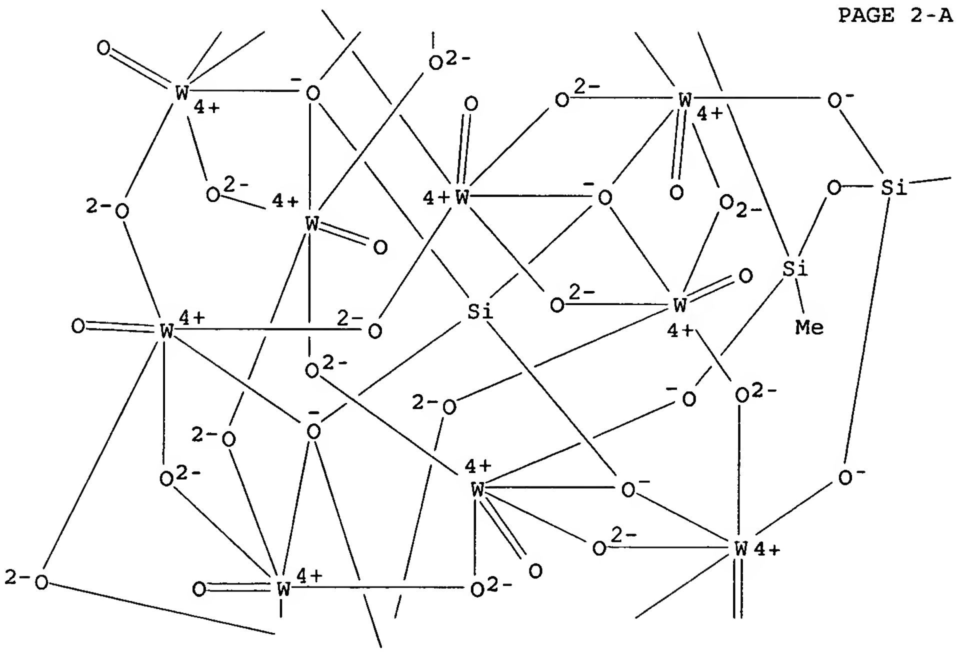

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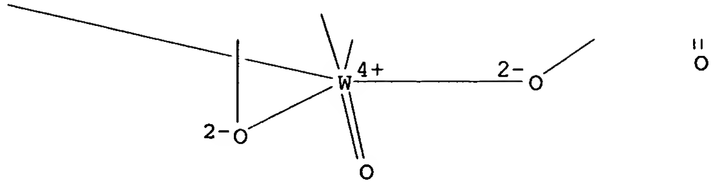
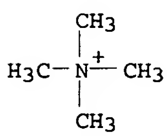


CM 2

CRN 51-92-3
CMF C4 H12 N



RN 141483-63-8 HCAPLUS
CN Titanate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-
oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':
κO':κO':κO'':κO'':κO'':κO''':.
kappa.O''':κO''']]-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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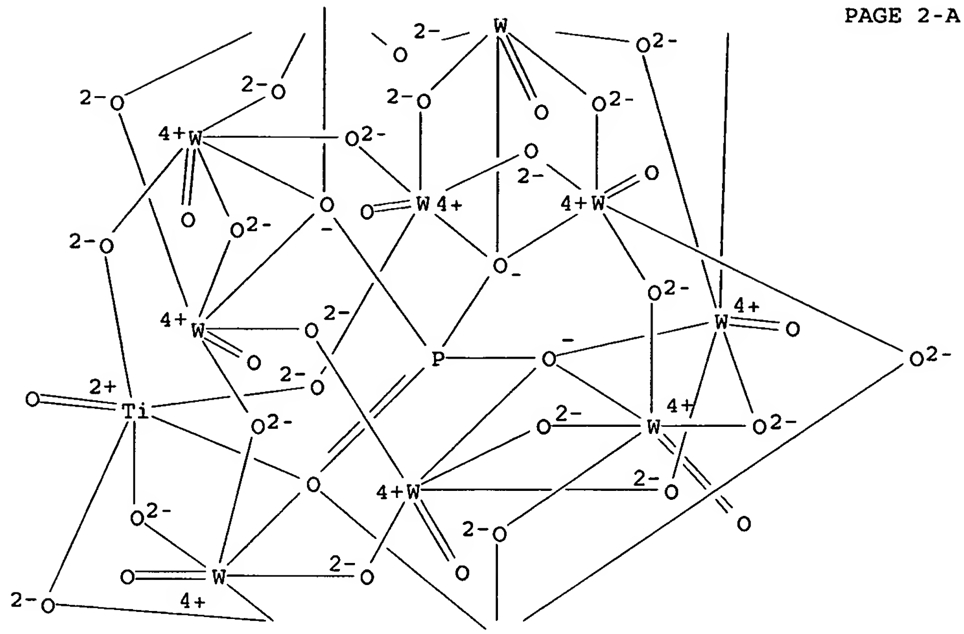

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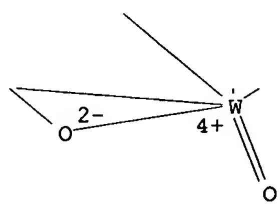

●5 K^+

RN 162958-09-0 HCAPLUS
CN Niobate(7-), [μ12-[orthosilicato(4-)-
O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]nona-μ-
oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-,
heptahydrogen, compd. with N,N-dimethylmethanamine (1:7) (9CI)
(CA INDEX NAME)

CM 1

CRN 162958-08-9
CMF H . 1/7 Nb3 O40 Si W9
CCI CCS

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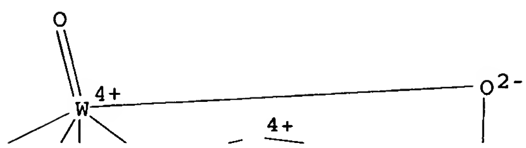

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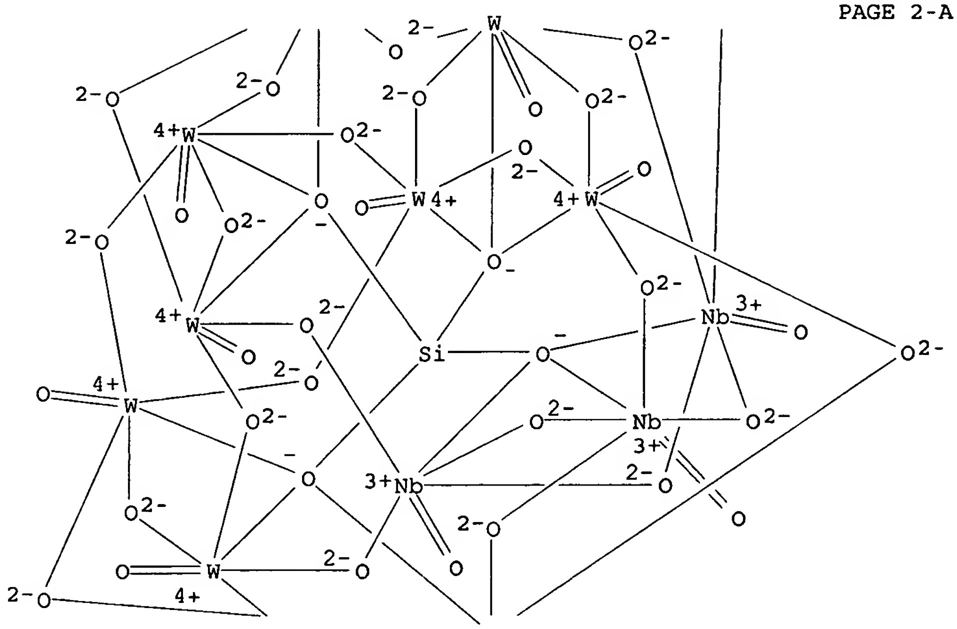

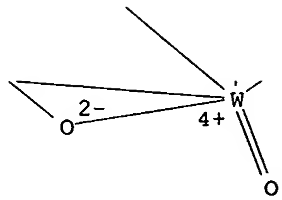

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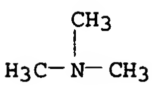
●7 H^+

CM 2

CRN 75-50-3
CMF C3 H9 N



RN 162958-11-4 HCAPLUS
CN Niobate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetra-μ-oxooxo-, pentahydrogen, compd. with N,N-dimethylmethanamine (1:5) (9CI) (CA INDEX NAME)

CM 1

CRN 162958-10-3
CMF H . 1/5 Nb O40 Si W11
CCI CCS

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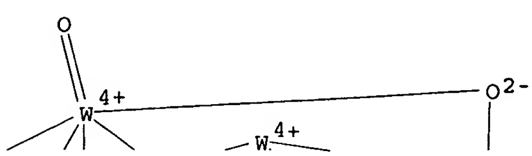

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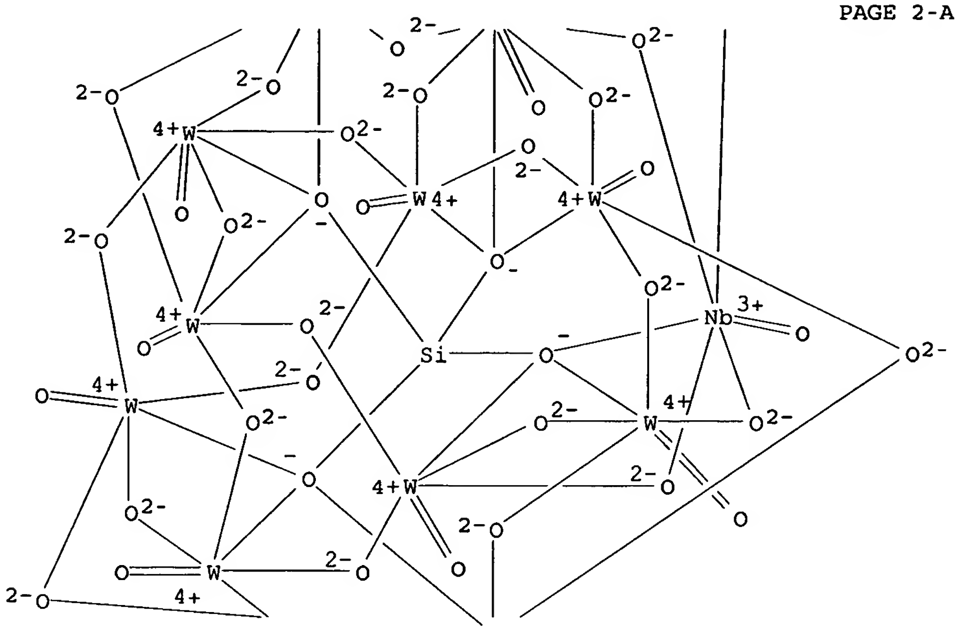

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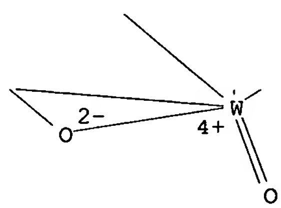
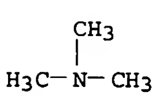


●5 H^+

CM 2

CRN 75-50-3
CMF C3 H9 N



RN 162958-14-7 HCAPLUS
CN Tantalate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetra-μ-oxooxo-, pentahydrogen, compd. with N,N-dimethylmethanamine (1:5) (9CI) (CA INDEX NAME)

CM 1

CRN 162958-13-6
CMF H . 1/5 O40 Si Ta W11
CCI CCS

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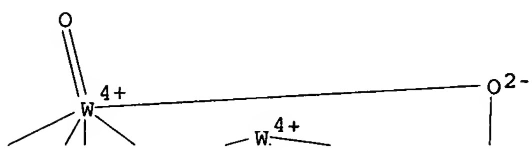

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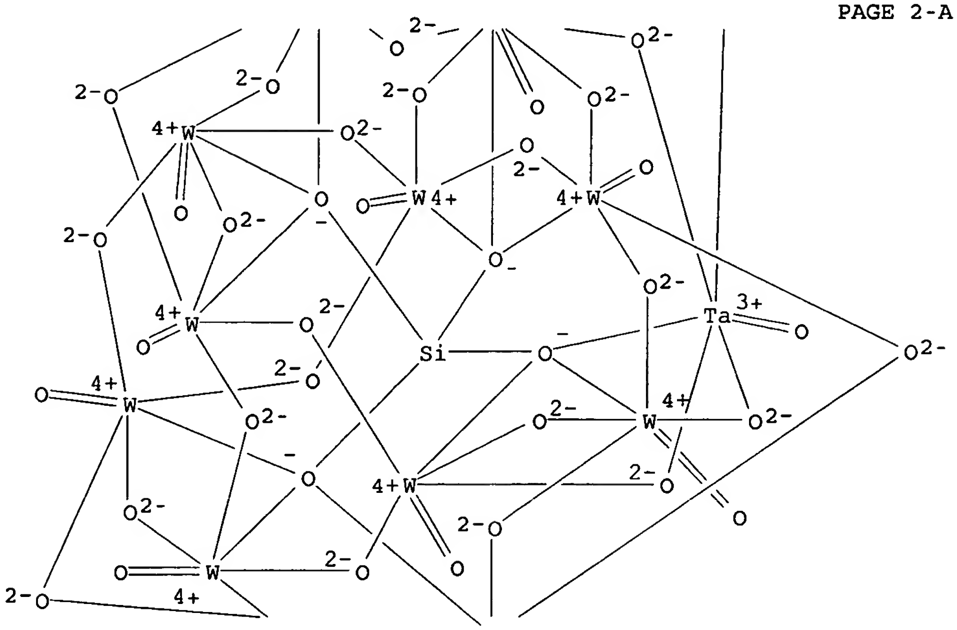

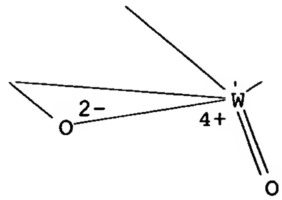

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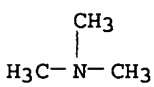
●5 H^+

CM 2

CRN 75-50-3
CMF C3 H9 N



RN 162958-20-5 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-dihexyl-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1:κO3:κO3]][μ11-[orthosilicato(4-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''']]eicosa-μ-oxoundecaoxoundecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

CM 1

CRN 162958-19-2
CMF C12 H26 O40 Si3 W11
CCI CCS

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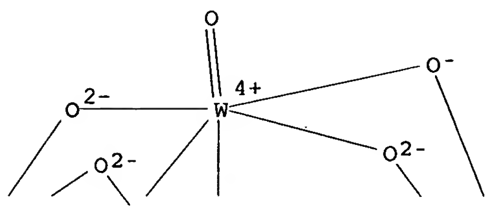

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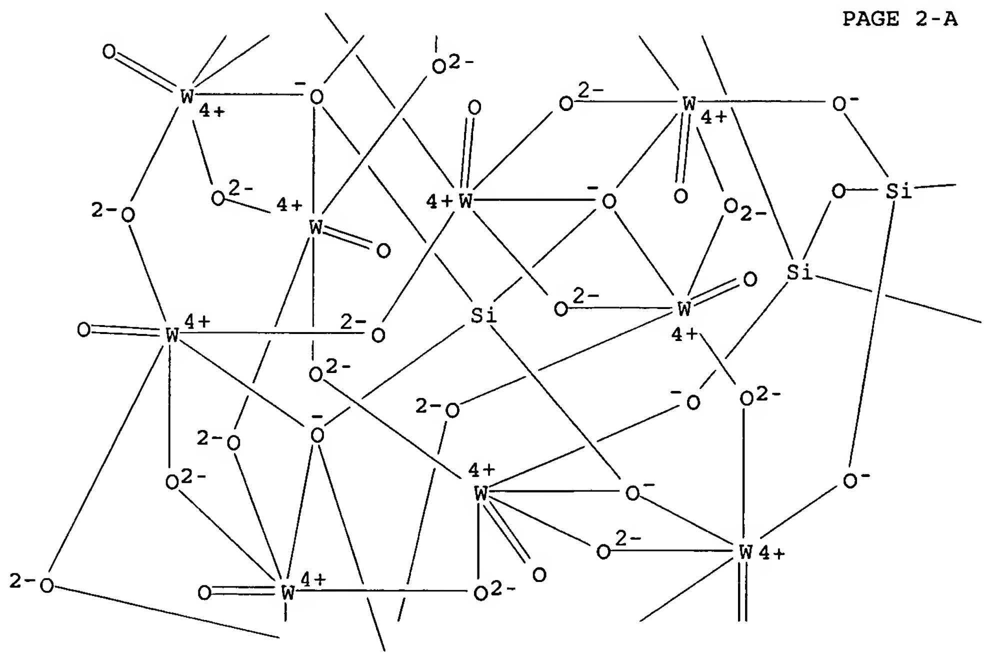

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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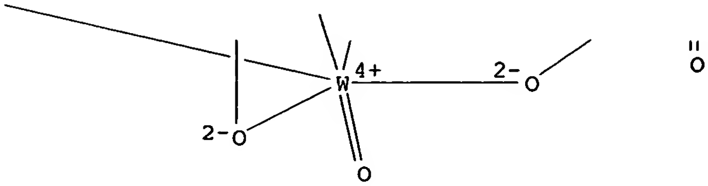
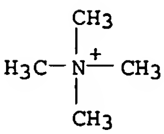


CM 2

CRN 51-92-3
CMF C4 H12 N



RN 189277-29-0 HCAPLUS
CN Niobate(7-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''',κO''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, heptapotassium (9CI) (CA INDEX NAME)

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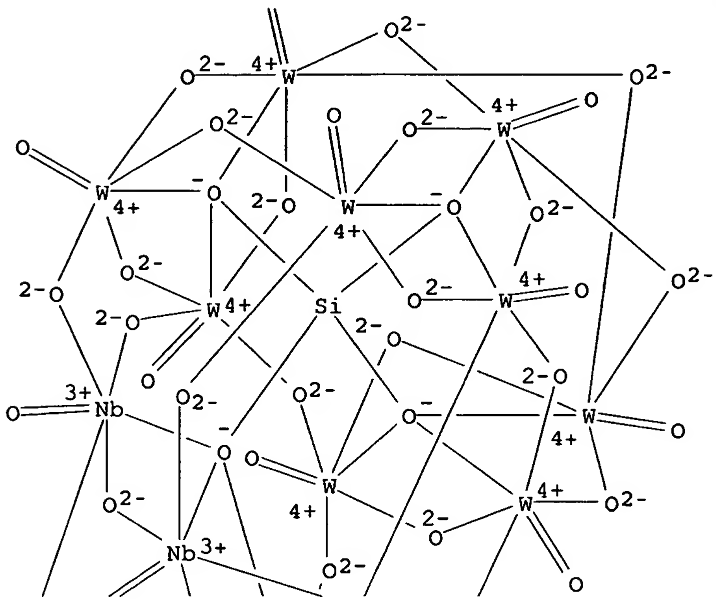

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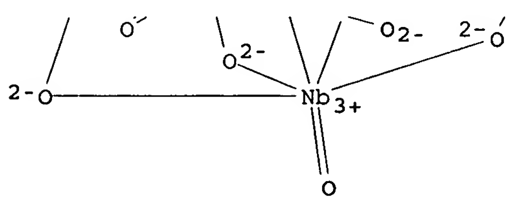

●7 K^+

RN 189823-27-6 HCAPLUS
CN Tungstate(4-), [μ4-[1,3-bis(3-chloropropyl)-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']][μ11-[orthosilicato(4-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''']]eicosa-μ-oxoundecaoxoundeca-, tetracesium (9CI) (CA INDEX NAME)

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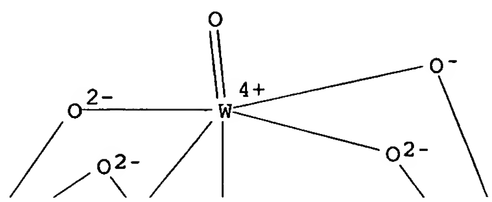

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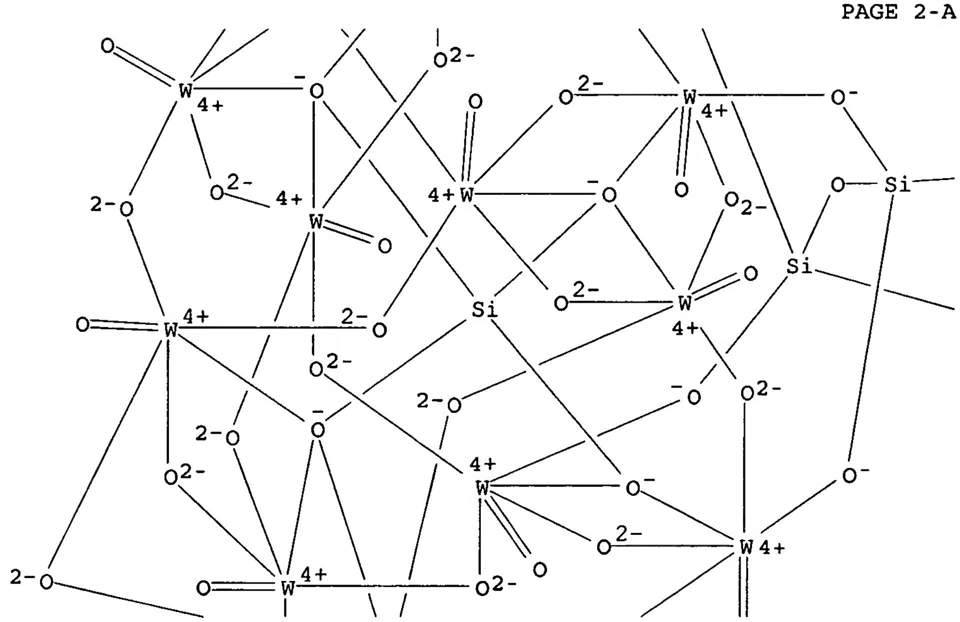

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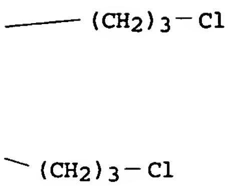

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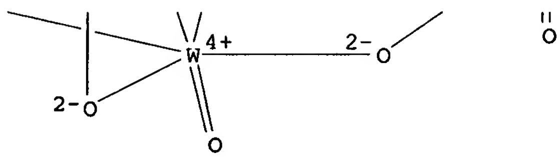


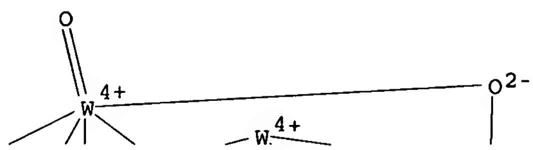
● 4 Cs^{+}

RN 194150-76-0 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen, compd. with 1-methyl-2-pyrrolidinone (1:3) (9CI) (CA INDEX NAME)

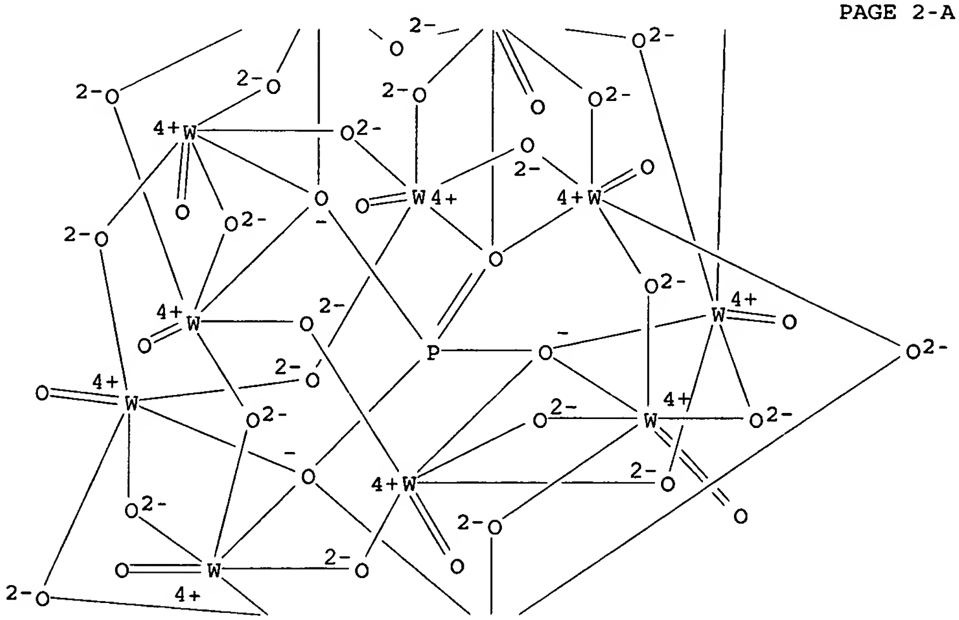
CM 1

CRN 1343-93-7
CMF H . 1/3 O40 P W12
CCI CCS

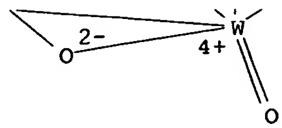
PAGE 1-A



PAGE 2-A



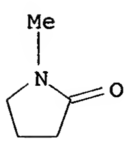
PAGE 3-A



●3 H^+

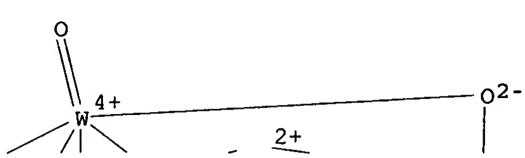
CM 2

CRN 872-50-4
CMF C5 H9 N O

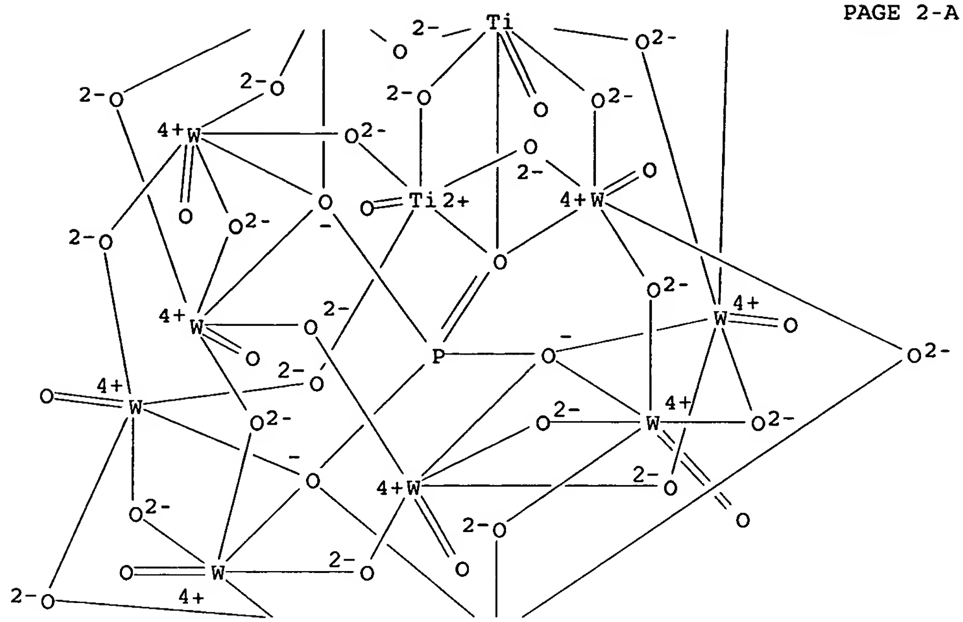


RN 215594-65-3 HCAPLUS
CN Titanate(7-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, heptasodium (9CI) (CA INDEX NAME)

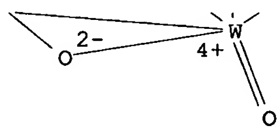
PAGE 1-A



PAGE 2-A



PAGE 3-A



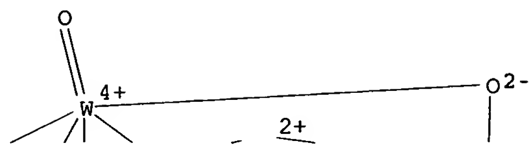
● 7 Na^+

RN 215594-66-4 HCAPLUS
CN L-Arginine, (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dititanate(7-) (7:1) (9CI) (CA INDEX NAME)

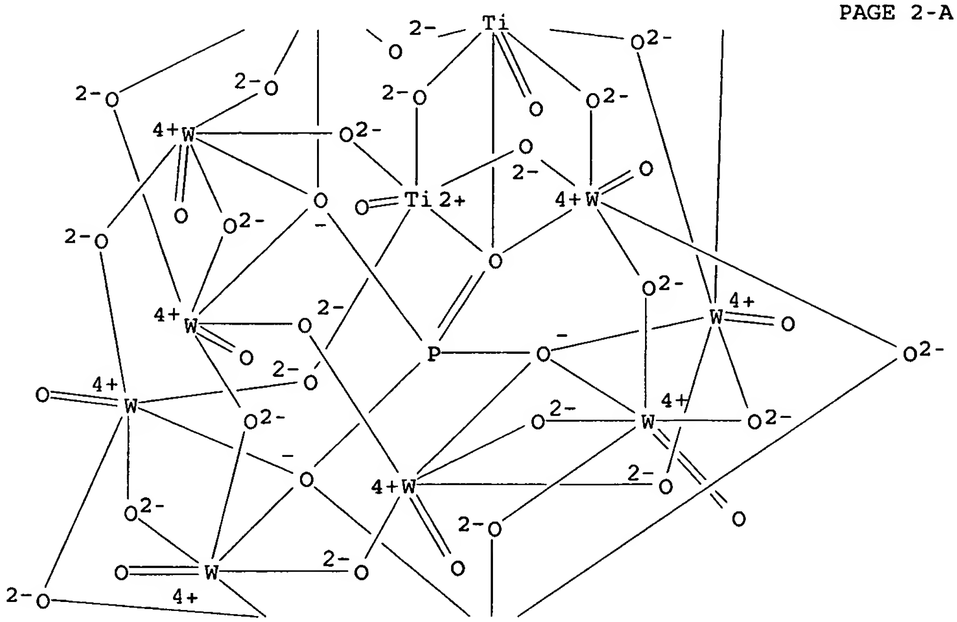
CM 1

CRN 215601-31-3
CMF H . 1/7 O40 P Ti2 W10
CCI CCS

PAGE 1-A



PAGE 2-A



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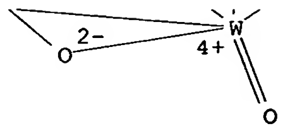
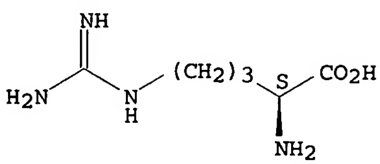


●7 H^+

CM 2

CRN 74-79-3
CMF C6 H14 N4 O2

Absolute stereochemistry.

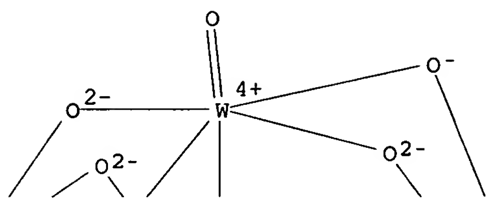


RN 215594-72-2 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-bis(3-chloropropyl)-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:.kappa.O3']][μ11-[orthosilicato(4-)-κO:κO:κO:.kappa.O':κO':κO':κO'':κO'':κO'':.kappa.O''':κO''']]eicosa-μ-oxoundecaoxoundecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

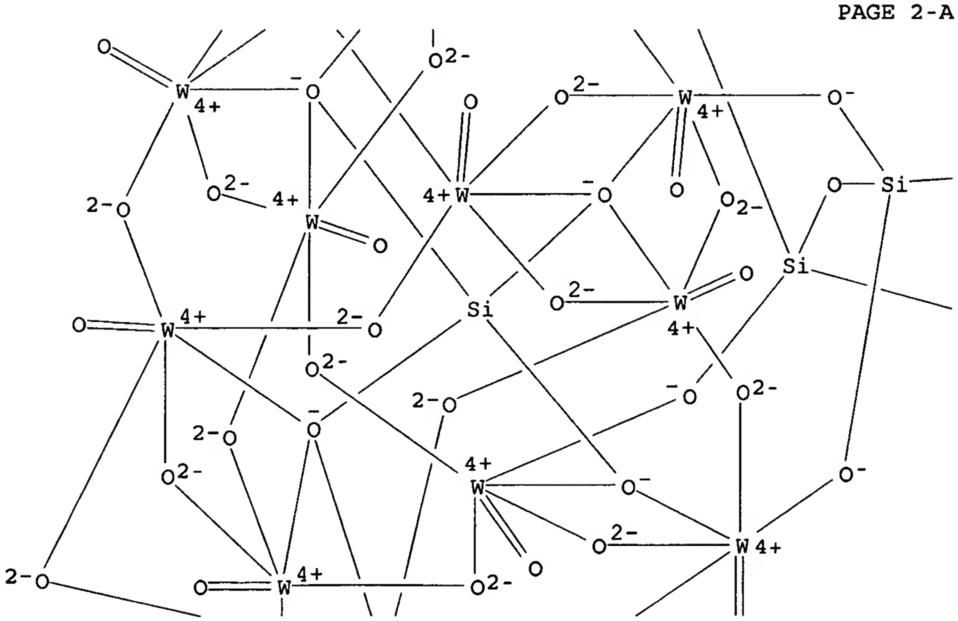
CM 1

CRN 215594-71-1
CMF C6 H12 Cl2 O40 Si3 W11
CCI CCS

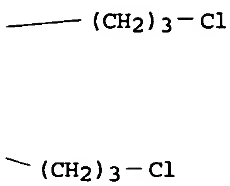
PAGE 1-A



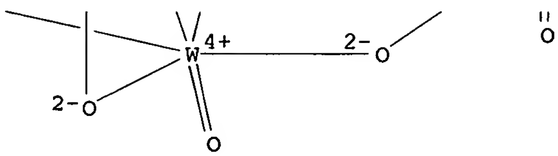
PAGE 2-A



PAGE 2-B

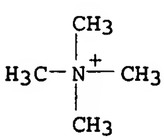


PAGE 3-A



CM 2

CRN 51-92-3
CMF C4 H12 N



RN 215594-74-4 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-bis(1,1-dimethylethyl)-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']][μ11-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''']]eicosa-μ-oxoundecaoxoundecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

CM 1

CRN 215594-73-3
CMF C8 H18 O40 Si3 W11
CCI CCS

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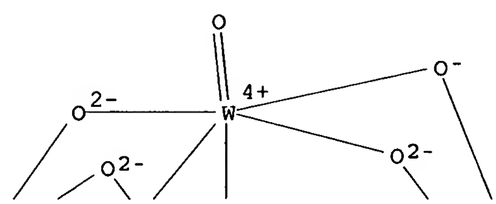
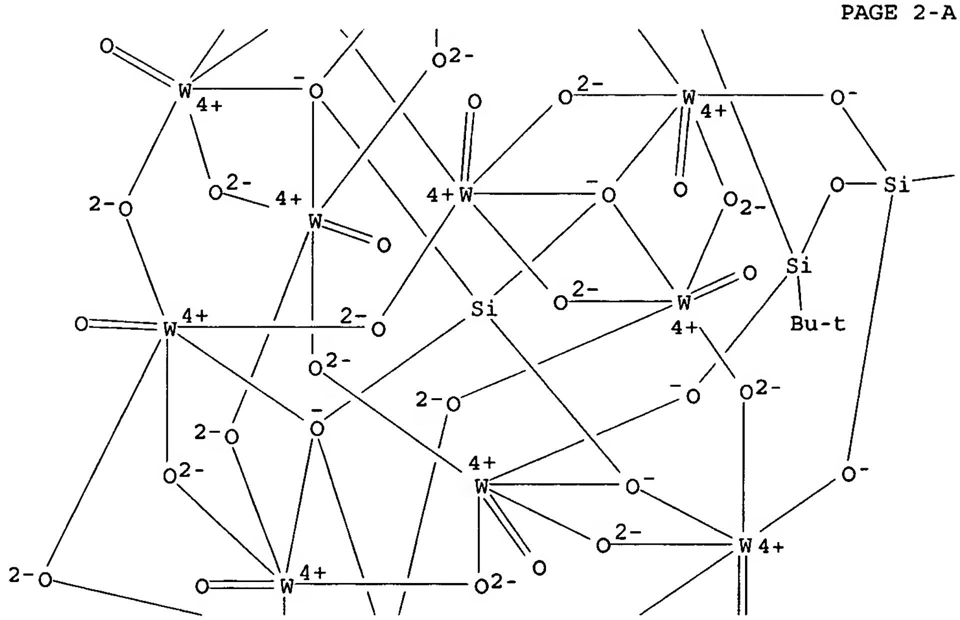
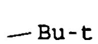


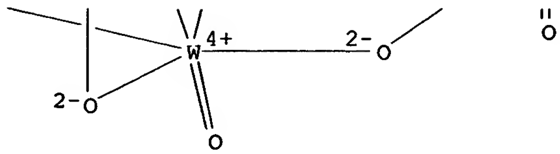
PAGE 2-A



PAGE 2-B

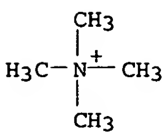


PAGE 3-A



CM 2

CRN 51-92-3
CMF C4 H12 N



RN 215594-76-6 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-bis(2-methylpropyl)-
1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:.ka
ppa.O3']][μ11-[orthosilicato(4-)-κO:κO:κO:.ka
ppa.O':κO':κO':κO'':κO'':κO'':.kappa
.O''':κO''']]eicosa-μ-oxoundecaoxoundecatungstate(4-)
(4:1) (9CI) (CA INDEX NAME)

CM 1

CRN 215594-75-5
CMF C8 H18 O40 Si3 W11
CCI CCS

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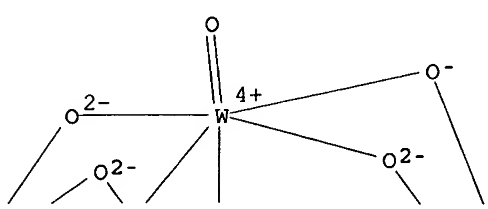
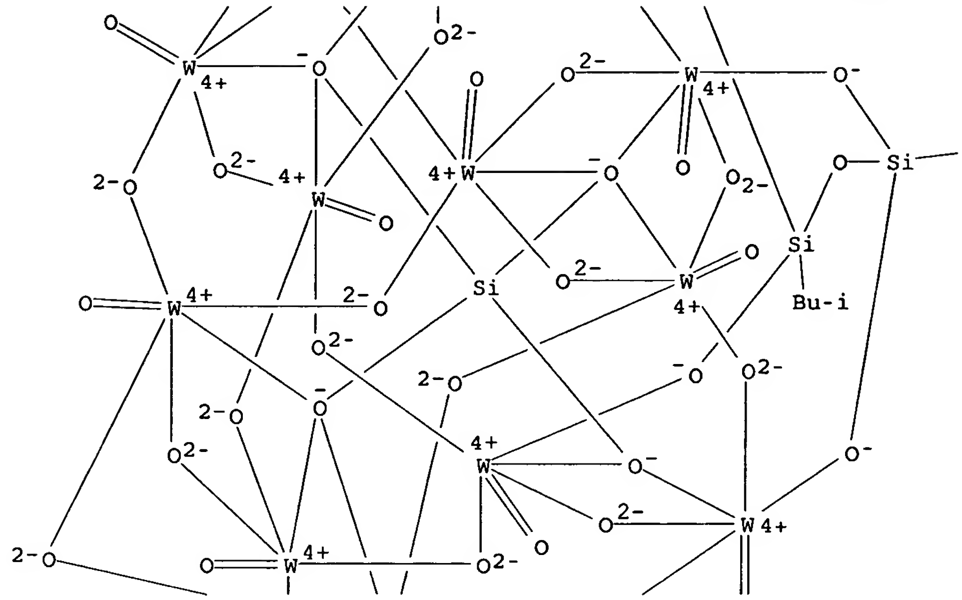
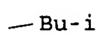


PAGE 2-A



PAGE 2-B



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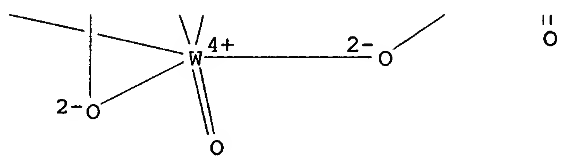
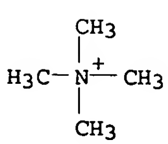


CM 2

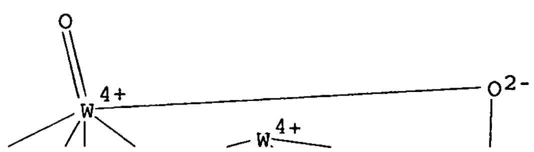
CRN 51-92-3
CMF C4 H12 N



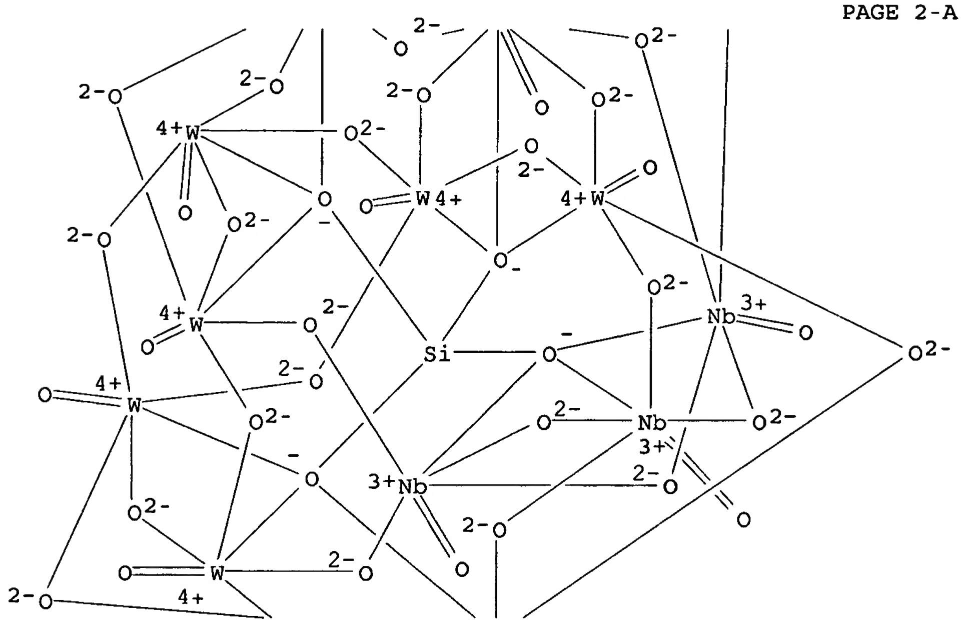
RN 215594-80-2 HCAPLUS
CN Niobate(7-), [μ12-[orthosilicato(4-)-

κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]nona-
μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-,
heptacesium (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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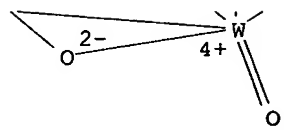


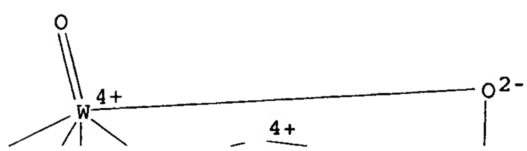
●7 Cs+

RN 215594-81-3 HCAPLUS
CN Niobate(7-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, heptahydrogen, compd. with guanidine (1:7) (9CI) (CA INDEX NAME)

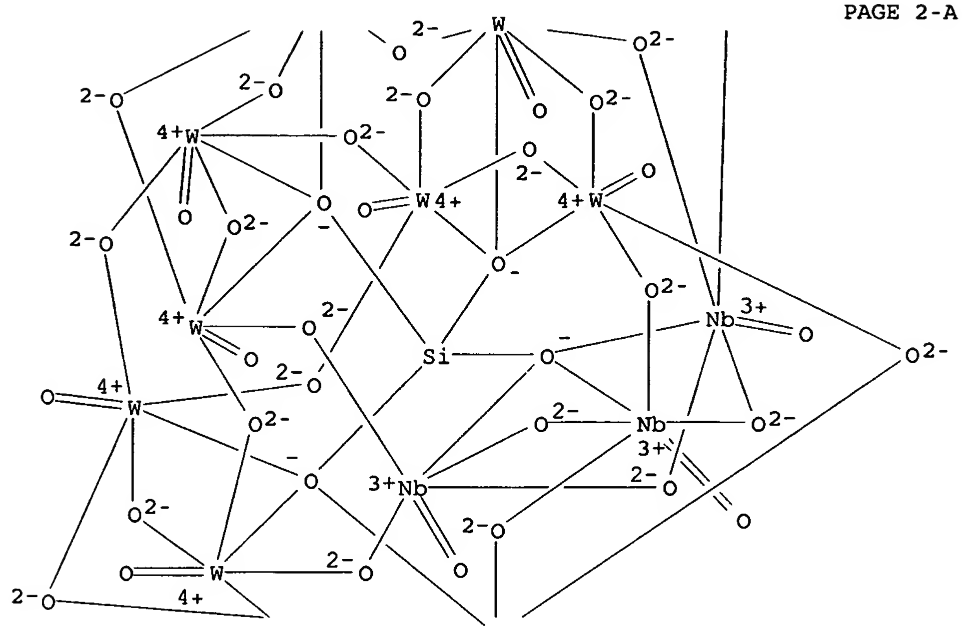
CM 1

CRN 162958-08-9
CMF H . 1/7 Nb3 O40 Si W9
CCI CCS

PAGE 1-A



PAGE 2-A



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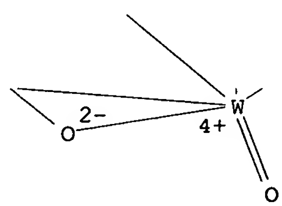
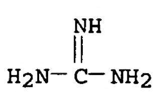


●7 H^+

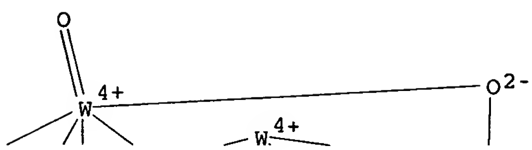
CM 2

CRN 113-00-8
CMF C H5 N3



RN 215594-82-4 HCAPLUS
CN Niobate(7-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, heptarubidium (9CI) (CA INDEX NAME)

PAGE 1-A



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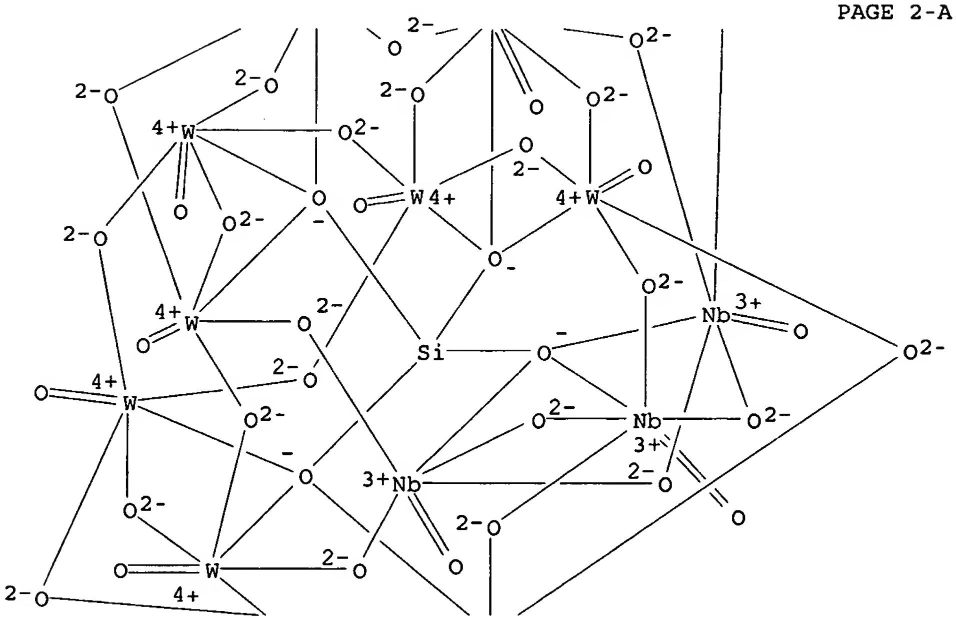

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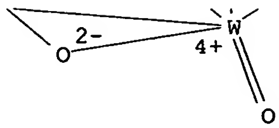


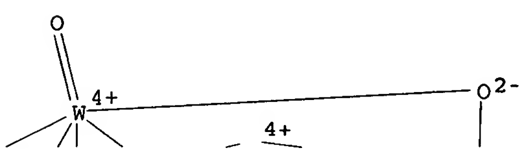
●7 Rb+

RN 215594-83-5 HCAPLUS
CN Niobate(7-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, heptahydrogen, compd. with pyridine (1:7) (9CI) (CA INDEX NAME)

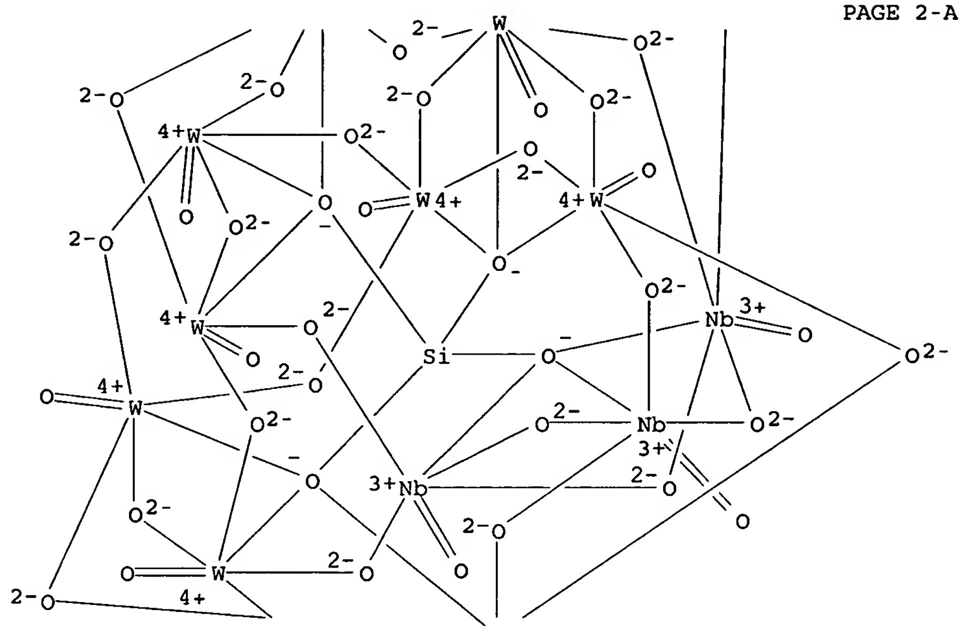
CM 1

CRN 162958-08-9
CMF H . 1/7 Nb3 O40 Si W9
CCI CCS

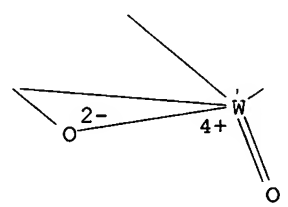
PAGE 1-A



PAGE 2-A

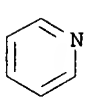


PAGE 3-A



CM 2

CRN 110-86-1
CMF C5 H5 N



RN 215594-86-8 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, [μ4-[1,3-dihexadecyl-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']][μ11-[orthosilicato(4-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''']]eicosa-μ-oxoundecaoxoundecatungstate(4-) (4:1) (9CI) (CA INDEX NAME)

CM 1

CRN 215594-85-7
CMF C32 H66 O40 Si3 W11
CCI CCS

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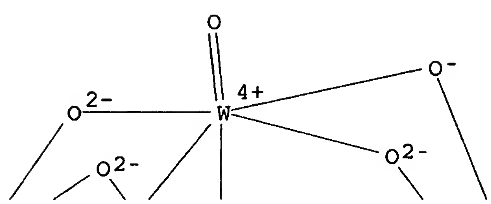
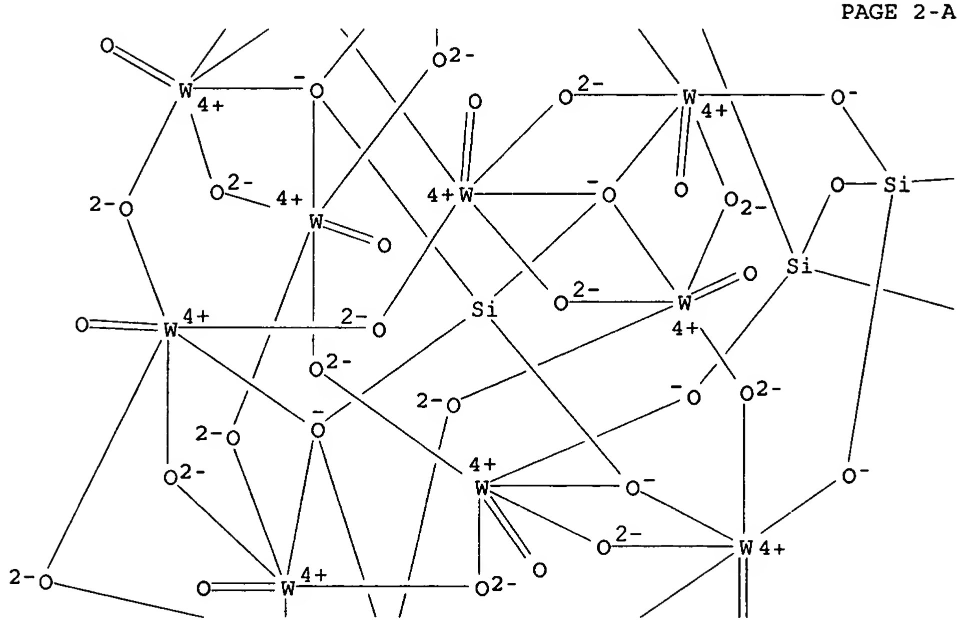


PAGE 2-A



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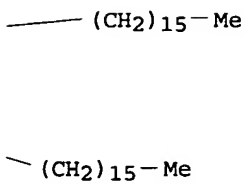

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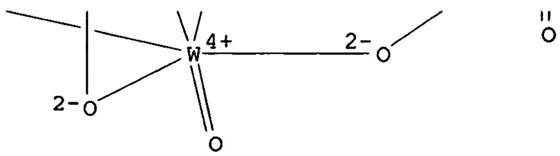
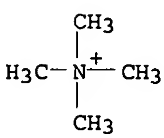


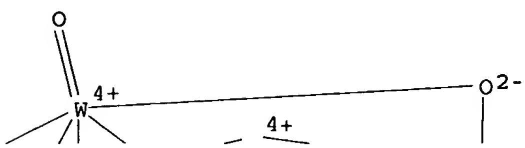
CM 2

CRN 51-92-3
CMF C4 H12 N

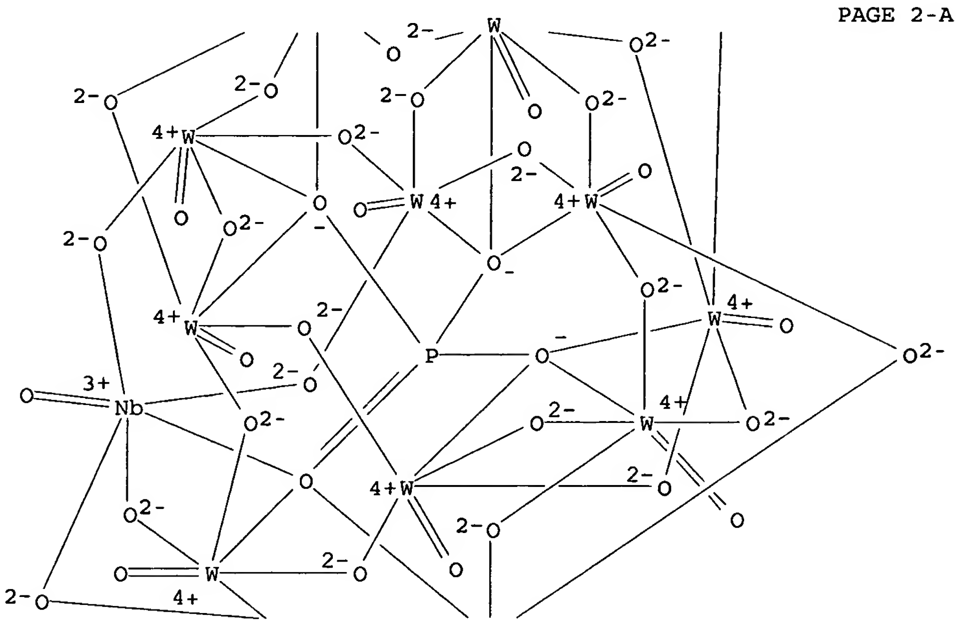


RN 215594-90-4 HCAPLUS
CN Niobate(4-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, tetrapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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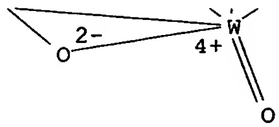


●4 K+

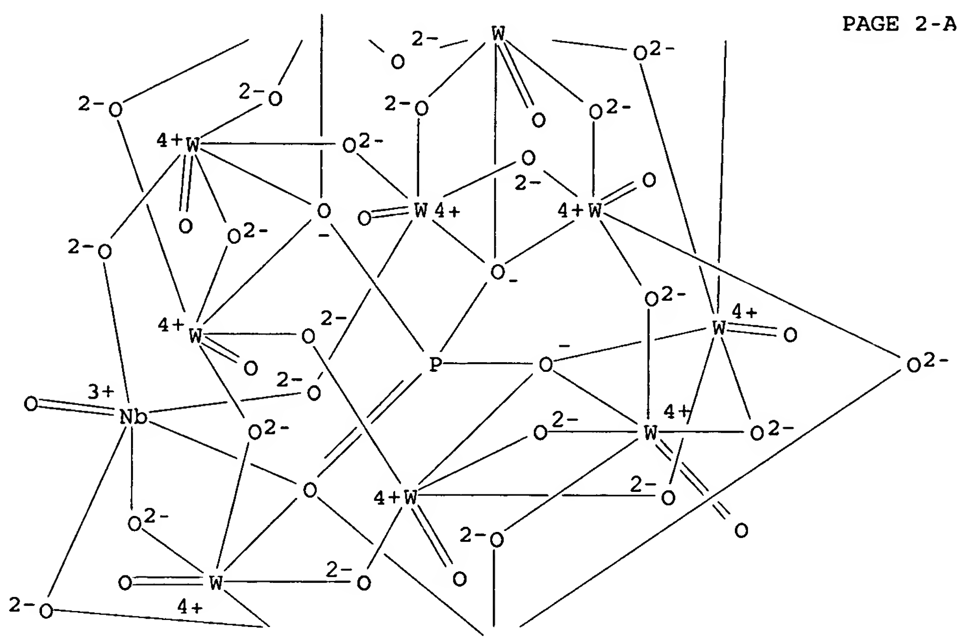
RN 215594-91-5 HCAPLUS
CN Niobate(4-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]-, tetrahydrogen, compd. with N,N-dimethylmethanamine (1:4) (9CI) (CA INDEX NAME)

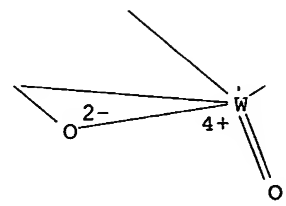
CM 1

CRN 158567-73-8
CMF H . 1/4 Nb O40 P W11
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





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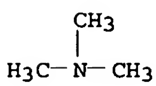
●4 H^+

CM 2

CRN 75-50-3
CMF C3 H9 N



RN 215594-93-7 HCAPLUS
CN Niobate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetra-μ-oxooxo-, pentapotassium (9CI) (CA INDEX NAME)

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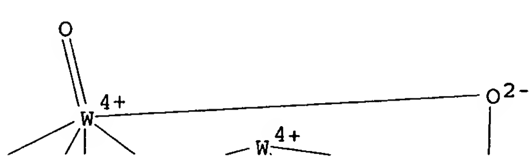
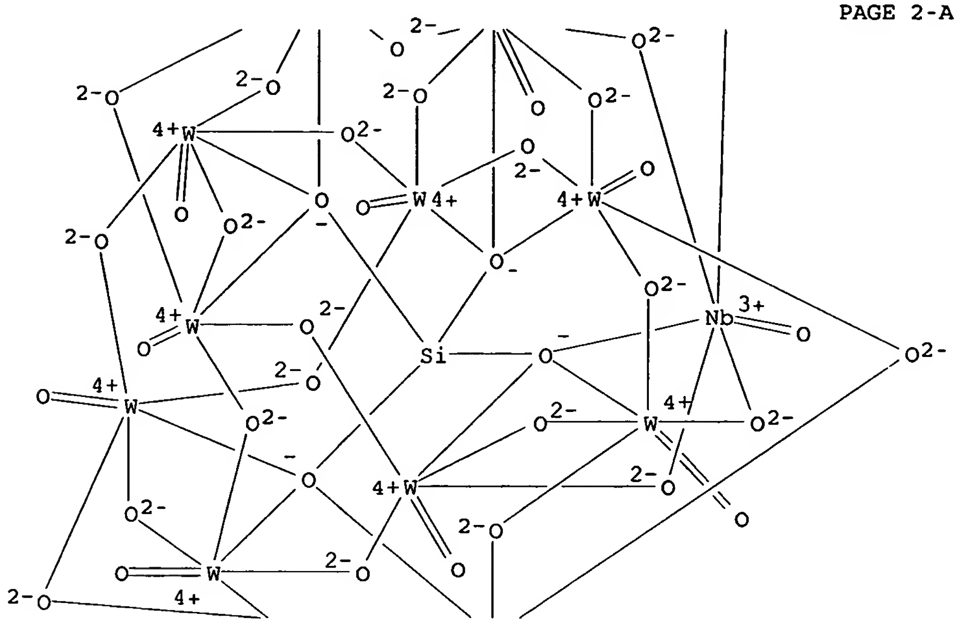
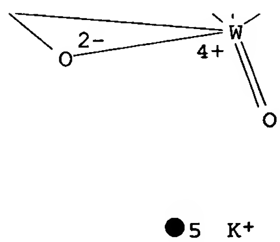


PAGE 2-A

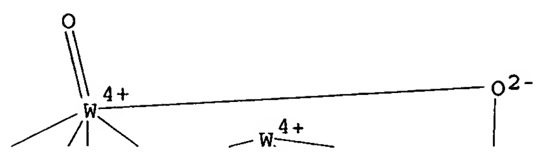


PAGE 3-A



RN 215594-95-9 HCAPLUS
CN Tantalate(5-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetra-μ-oxooxo-, pentapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



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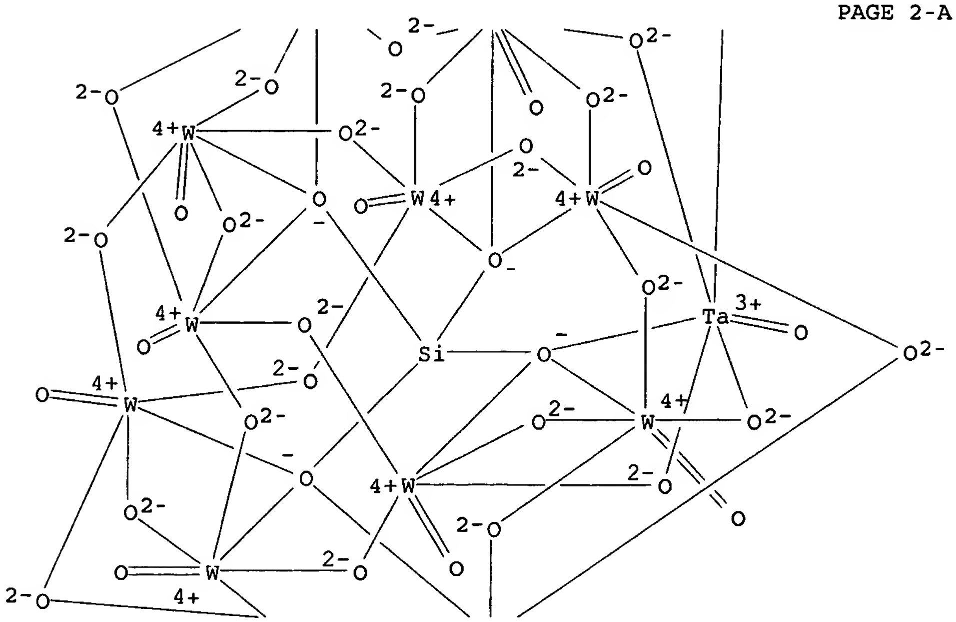
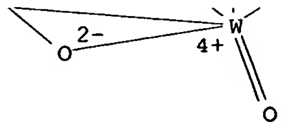


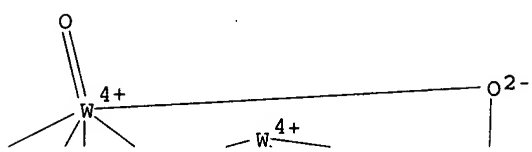
PAGE 3-A



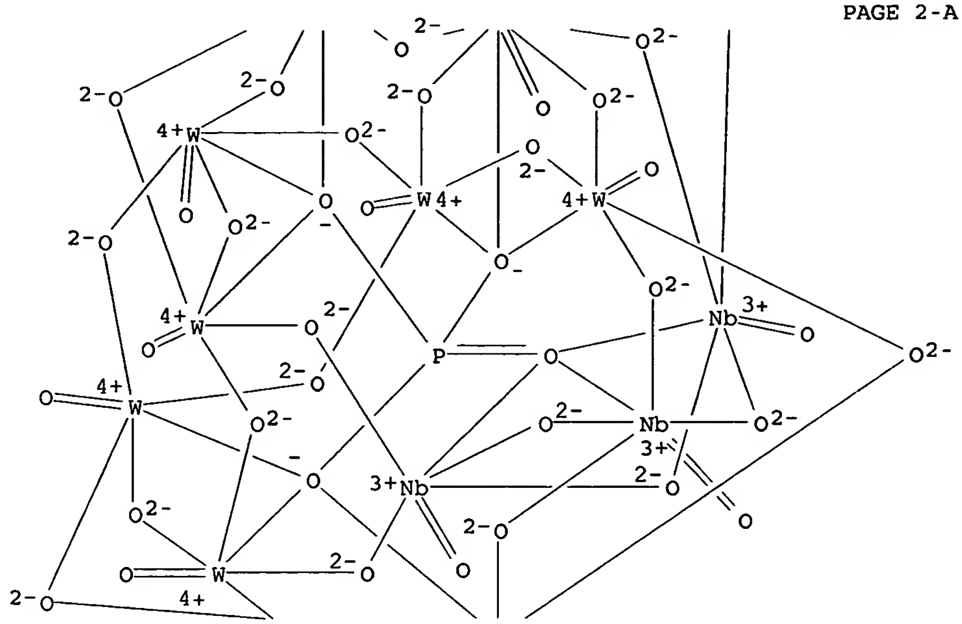
●5 K+

RN 215594-98-2 HCAPLUS
CN Niobate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexapotassium (9CI) (CA INDEX NAME)

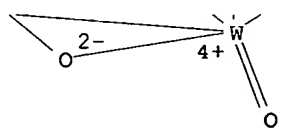
PAGE 1-A



PAGE 2-A



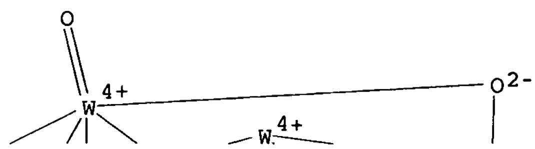
PAGE 3-A



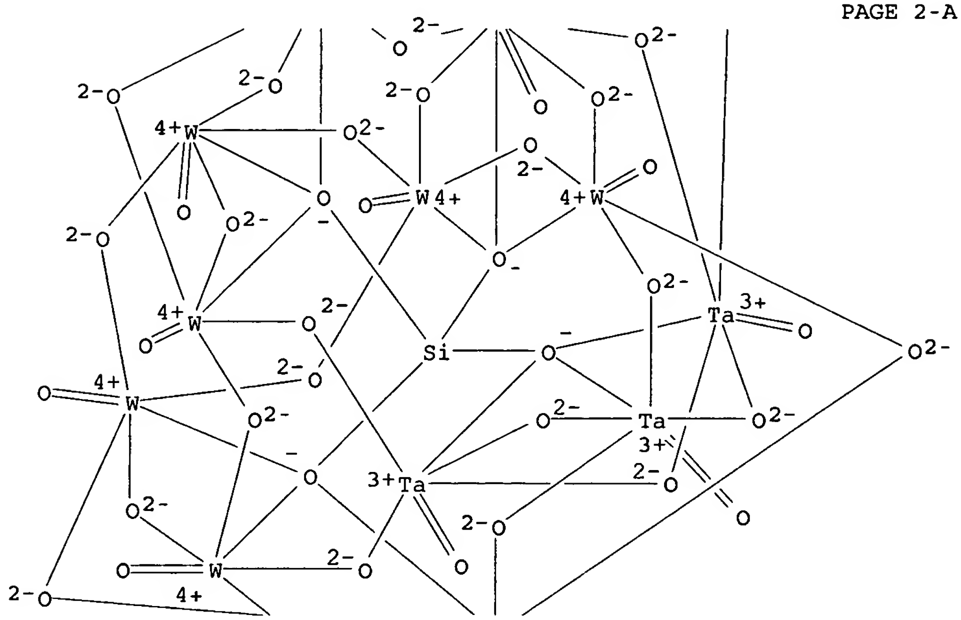
$\bullet$6 K^+

RN 215595-02-1 HCAPLUS
CN Tantalate(7-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, heptapotassium (9CI) (CA INDEX NAME)

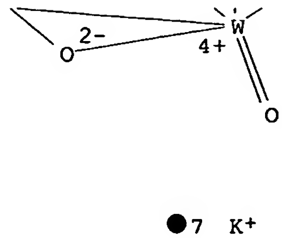
PAGE 1-A



PAGE 2-A

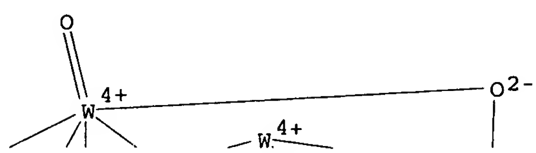


PAGE 3-A



RN 215595-06-5 HCAPLUS
CN Tantalate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



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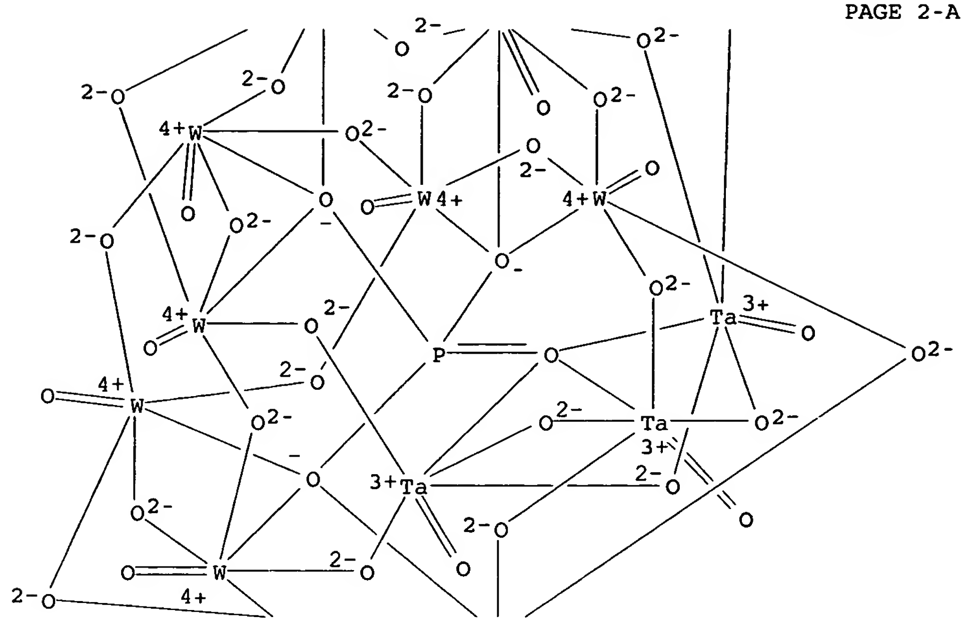
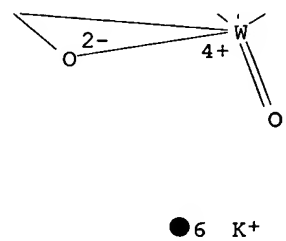


PAGE 3-A



RN 215595-09-8 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, hydrogen cobaltate[μ4-[1,3-diethyl-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']]eicosa-μ-oxo-μ3-oxotri-μ4-oxoundecaoxoundecatungstate(6-) (4:2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 215595-08-7
CMF C4 H10 Co O40 Si2 W11
CCI CCS

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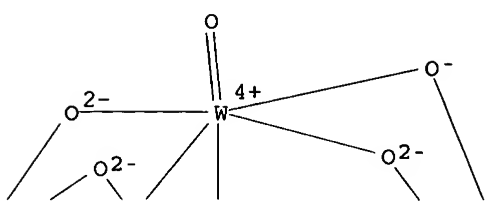
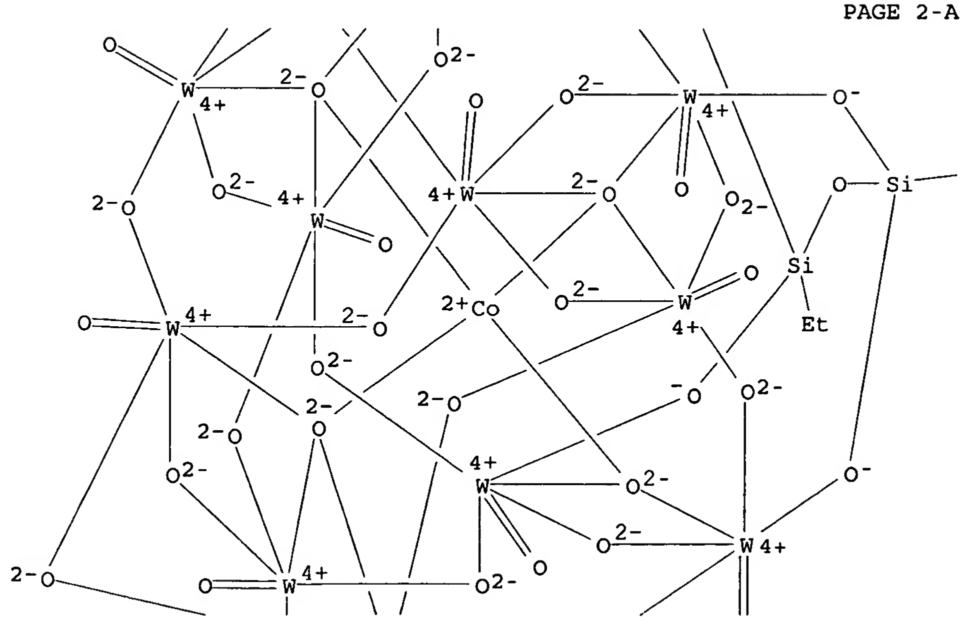


PAGE 2-A



PAGE 2-B

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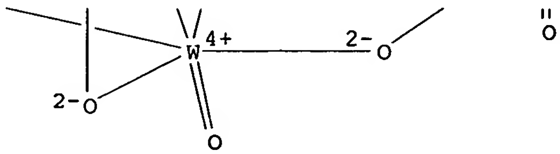
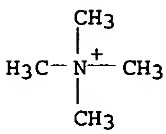
PAGE 3-A



CM 2

CRN 51-92-3
CMF C4 H12 N

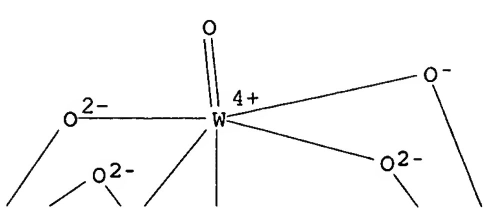


RN 215595-11-2 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, dihydrogen [μ4-[1,3-bis(2-methylpropyl)-1,1,3,3-disiloxanetetrolato(4-)-κO1:κO1':κO3:κO3']]cobaltateeicosa-μ-oxo-μ3-oxotri-μ4-oxoundecaoxoundecatungstate(6-) (4:2:1) (9CI) (CA INDEX NAME)

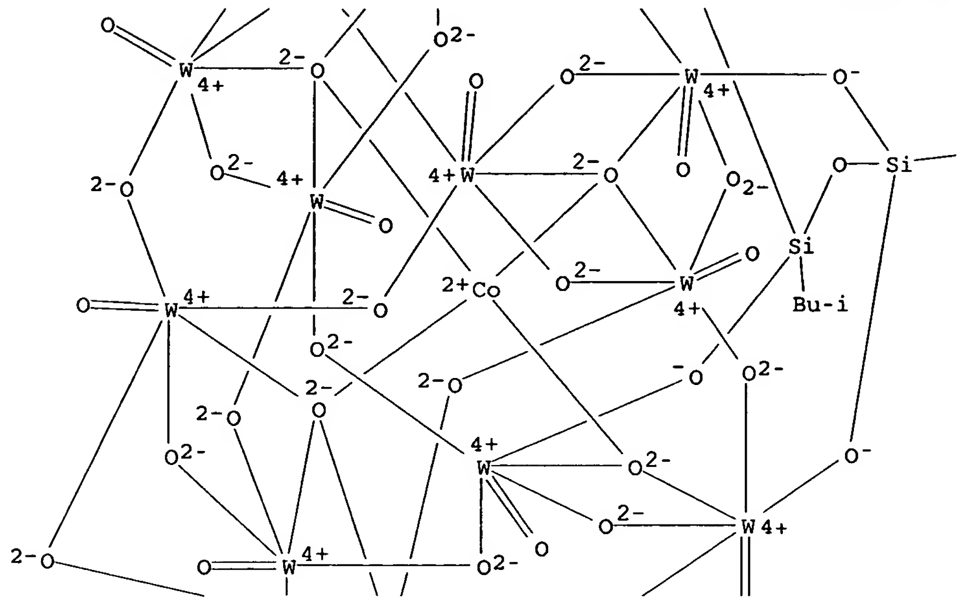
CM 1

CRN 215595-10-1
CMF C8 H18 Co O40 Si2 W11
CCI CCS

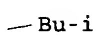
PAGE 1-A



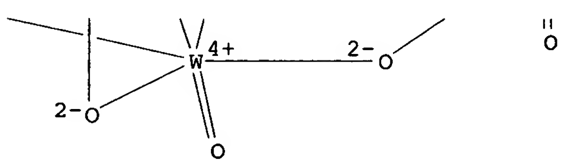
PAGE 2-A



PAGE 2-B

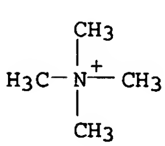


PAGE 3-A



CM 2

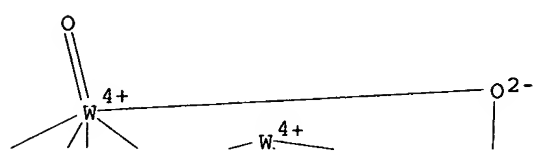
CRN 51-92-3
CMF C4 H12 N



RN 215595-19-0 HCAPLUS
CN Yttrate(7-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[tetrahydroxyborato(5-)-

κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]di-,
heptapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



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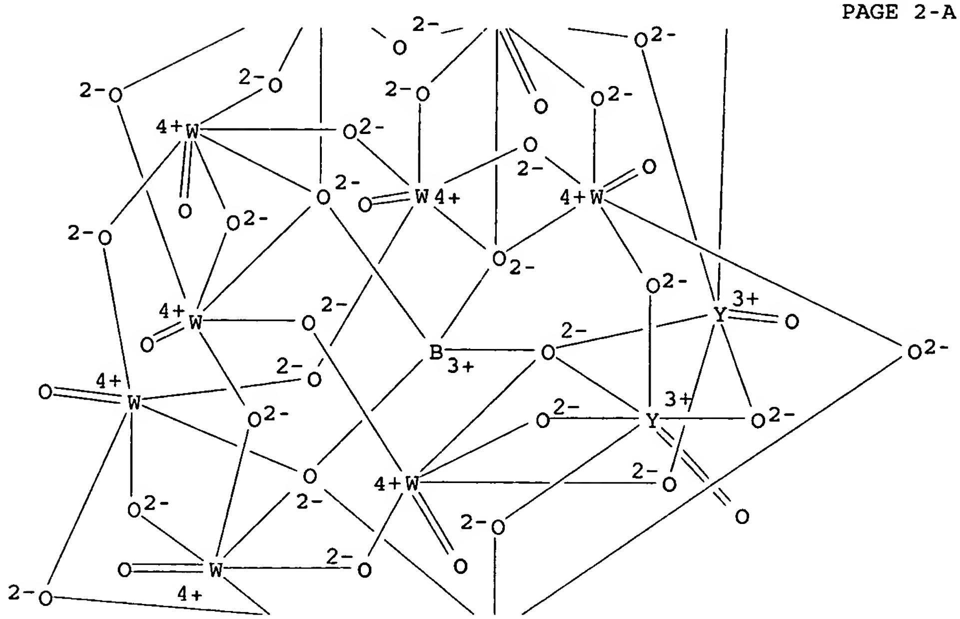

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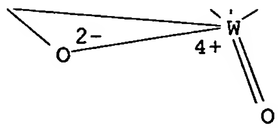

RN 215595-21-4 HCAPLUS
CN Niobate(7-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]nona-
μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-,
heptapotassium (9CI) (CA INDEX NAME)

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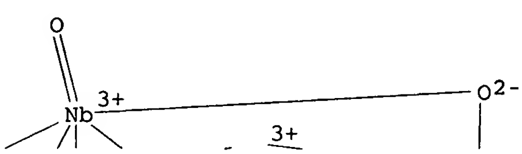

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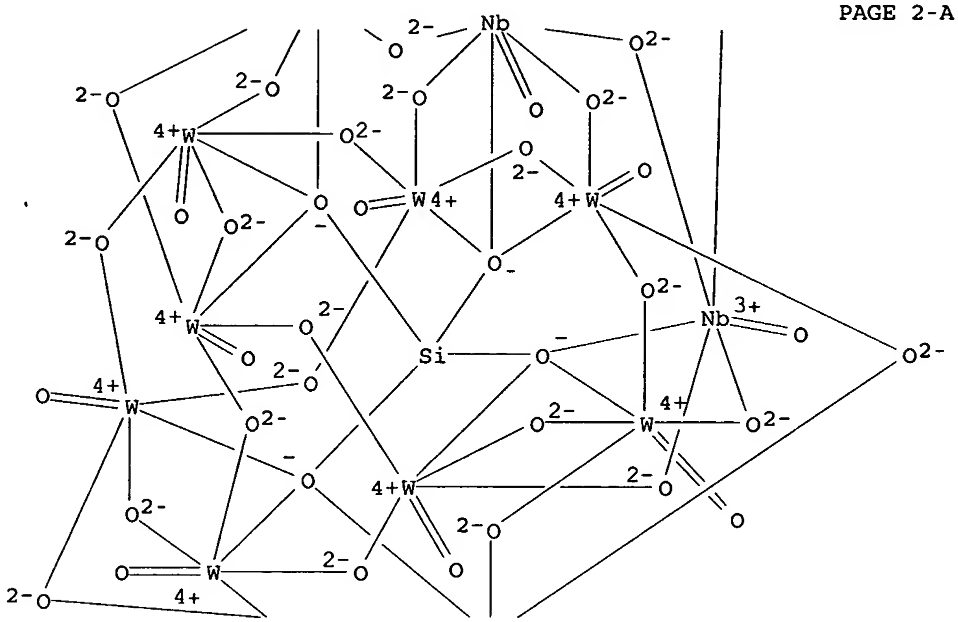
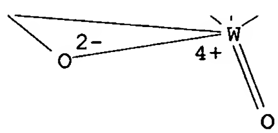


PAGE 3-A



●7 K^+

RN 215595-22-5 HCAPLUS
CN L-Lysine, (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-
oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO
':κO':κO':κO'':κO'':κO'':κO'''
:κO''':κO''']]dititanate(7-) (7:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 215601-31-3
CMF H . 1/7 O40 P Ti2 W10
CCI CCS

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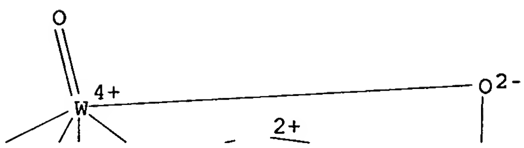

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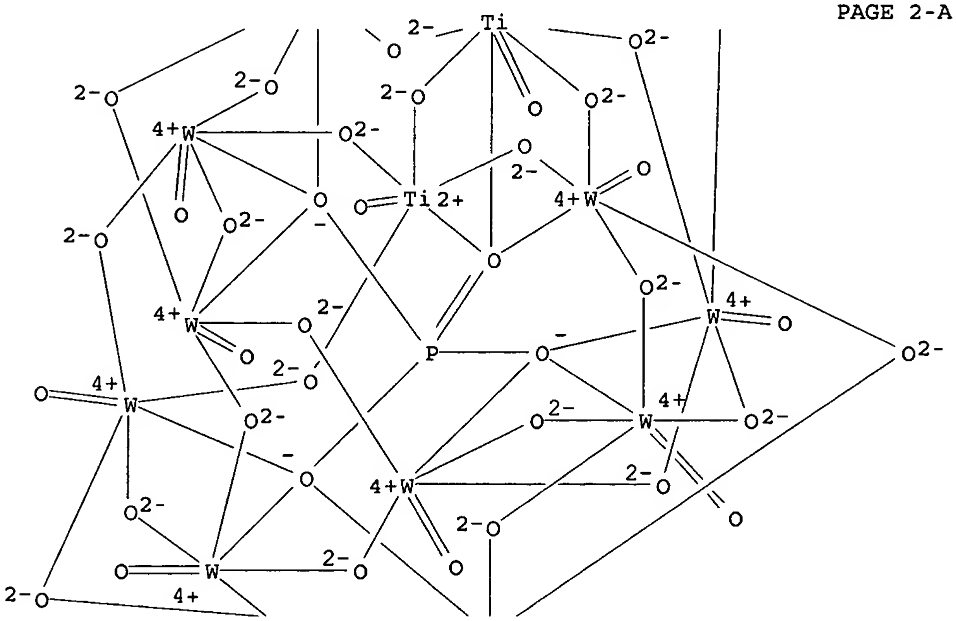

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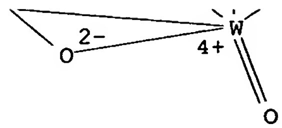
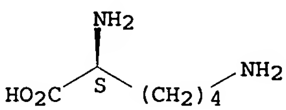


●7 H^+

CM 2

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 215595-24-7 HCAPLUS
CN Tungstate(6-), tetracosa-μ-oxotetra-μ4-oxododecaoxozincatedodeca-, hexahydrogen (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 215601-32-4 HCAPLUS
CN L-Histidine, (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dititanate(7-) (7:1) (9CI) (CA INDEX NAME)

CM 1

CRN 215601-31-3
CMF H . 1/7 O40 P Ti2 W10
CCI CCS

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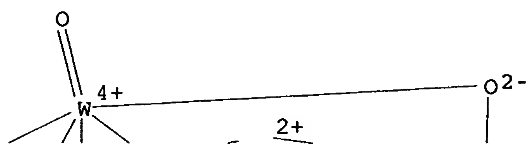

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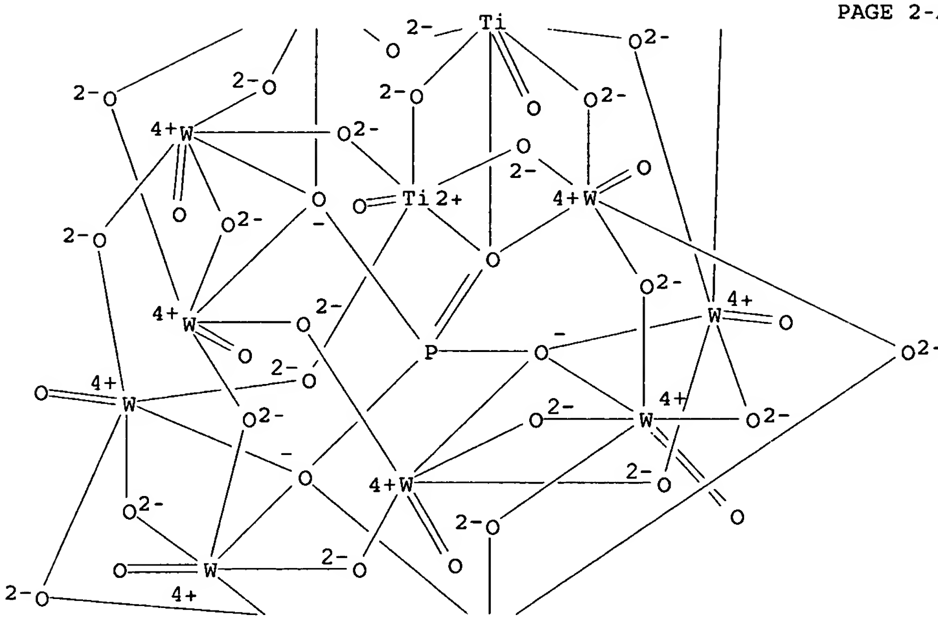

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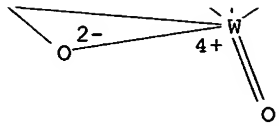
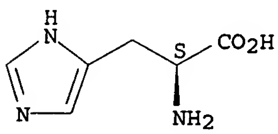


CM 2

CRN 71-00-1
CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).



IC ICM A01N055-02
ICS A01N059-14; A01N059-16; A01N059-20
INCL 514492000
CC 1-5 (**Pharmacology**)
Section cross-reference(s): 29, 63, 78
ST respiratory viral infection antiviral aerosol **polyoxometalate**
IT Respiratory tract
(infection, viral; method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)
IT Human immunodeficiency virus 1
Orthomyxovirus
Paramyxovirus
(inhibition of; method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)
IT Antiviral agents
Influenza A virus
Influenza B virus
Respiratory syncytial virus
(method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)
IT Heteropoly acids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)
IT Erythrocyte
(**polyoxometalate** inhibition of influenza A virus-caused hemagglutination and hemolysis of, of chick; method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)
IT Hemagglutination
Hemolysis
(**polyoxometalate** inhibition of influenza A virus-caused, of chick erythrocytes; method and aerosol spray

containing a **polyoxometalate** for treating and preventing respiratory viral infections)

IT Drug delivery systems
(sprays; method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)

IT Infection
(viral, respiratory; method and aerosol spray containing a **polyoxometalate** for treating and preventing respiratory viral infections)

IT **11078-54-9** **12027-38-2D**, solid solution with ammonium analog **12045-18-0** 12059-48-2 12141-67-2 12142-54-0 12200-88-3 **12297-12-0** **12297-12-0D**
, solid solns. with ammonium analog and protonated amino acid analog 12329-09-8 12329-10-1 12390-22-6 12411-74-4 12436-83-8 37300-95-1 39282-41-2 59054-50-1 59111-46-5 63950-53-8 63995-70-0 64684-58-8 70316-17-5 75656-59-6 **77981-80-7D**, solid solution with tetrahydrogen analog 79104-95-3 **81552-97-8** **82679-05-8**
83721-03-3 83721-04-4 **84303-03-7**
84303-05-9 84750-84-5 87261-30-1 89899-81-0,
Ammonium antimony sodium tungsten oxide ((NH4)17Sb9Na2W21O86)
92762-45-3 92767-45-8 93425-27-5 100513-52-8
101144-77-8 101346-99-0 101347-00-6 101347-04-0
101347-05-1 101347-09-5 101347-11-9 101347-12-0
101347-13-1 102073-48-3 108834-36-2 108987-13-9
110294-54-7 110313-16-1 110717-64-1 110717-65-2
110717-67-4 110717-70-9 111933-31-4 **112763-08-3**
112763-08-3D, solid solution with tetrahydrogen analog
116434-67-4 **119390-04-4** 119720-71-7 119923-89-6
123639-37-2 129238-68-2 129238-69-3D, solid solns. with sodium and tetramethylammonium analogs 129238-70-6D, solid solns. with sodium and tetramethylammonium analogs **129572-46-9**
129572-47-0 129592-85-4 **131359-48-3**
131541-68-9 **131541-69-0** **131541-70-3**
132460-56-1 **132460-57-2** **132460-58-3**
134107-05-4 **138026-47-8** 139631-90-6 139631-92-8
139631-93-9 **139631-95-1** **139631-96-2**
139631-98-4 **139632-00-1** **141483-63-8**
141532-40-3 141532-61-8 143823-91-0 143823-92-1
144547-23-9 146026-67-7 148362-93-0 149275-00-3
152444-38-7 152444-39-8 152444-40-1 152514-03-9
153481-12-0 153481-15-3 153541-07-2 158702-61-5
160097-69-8D, solid solns. with sodium and potassium analogs
160097-70-1D, solid solns. with potassium and sodim analogs
160220-13-3 160241-96-3 162958-07-8D, solid solns. with potassium and tetramethylammonium analogs **162958-09-0**
162958-11-4 162958-12-5 **162958-14-7**
162958-16-9 162958-18-1 **162958-20-5** 162958-21-6
162958-22-7 162958-22-7D, solid solns. with potassium and tetramethylammonium analogs 163128-97-0 163128-98-1
163151-26-6 163151-27-7 167397-05-9 170126-82-6
187086-33-5 **189277-29-0** 189277-31-4
189823-27-6 189823-28-7 189823-30-1 189823-33-4
189823-37-8 189823-38-9 **194150-76-0** 215545-74-7
215545-75-8, Potassium titanium tungsten oxide (K7Ti2W10O40)
215545-77-0 215545-78-1 215545-79-2 215545-80-5
215545-81-6 215545-82-7 215545-83-8 215545-84-9
215545-85-0 215545-86-1 215591-58-5 215594-35-7
215594-50-6 215594-63-1 215594-64-2 **215594-65-3D**,
solid solution with histidine or lysine analog **215594-66-4D**
, solid solution with sodium analog 215594-68-6 215594-70-0
215594-72-2 **215594-74-4** **215594-76-6**
215594-77-7 215594-78-8 215594-79-9 **215594-80-2**
215594-81-3 **215594-82-4** **215594-83-5**
215594-86-8 215594-87-9 215594-88-0 215594-89-1

215594-90-4 215594-91-5 215594-93-7
215594-95-9 215594-98-2 215595-00-9
215595-02-1 215595-04-3 **215595-06-5**
215595-07-6 **215595-09-8 215595-11-2**
215595-12-3 215595-13-4 215595-14-5 215595-15-6
215595-16-7 215595-17-8D, Niobium sodium tungsten oxide
(Nb4Na6W2O19), solid solution with potassium analog 215595-18-9
215595-19-0 215595-21-4 215595-22-5D,
solid solution with sodium analog 215595-23-6D, Niobium potassium
tungsten oxide (Nb4K6W2O19), solid solution with sodium analog
215595-24-7 215601-32-4 215601-56-2
215601-59-5
RL: BAC (Biological activity or effector, except adverse); BSU
(Biological study, unclassified); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(method and aerosol spray containing a **polyoxometalate**
for treating and preventing respiratory viral infections)

REFERENCE COUNT: 100 THERE ARE 100 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ACCESSION NUMBER: 1997:383186 HCAPLUS
DOCUMENT NUMBER: 127:109043
TITLE: Syntheses and characterization of the heptasodium salt of the Keggin-type triniobium-substituted polyoxoanion SiW9Nb3O7-40 and the all-sodium salt of the polyoxoanion-supported organometallic complex [(η5-C5Me5)Rh·SiW9Nb3O40]5-
AUTHOR(S): Nomiya, Kenji; Nozaki, Chika; Kano, Atsuyuki; Taguchi, Takayuki; Ohsawa, Katsunori
CORPORATE SOURCE: Department of Materials Science, Kanagawa University, Hiratsuka, Kanagawa, 259-12, Japan
SOURCE: Journal of Organometallic Chemistry (1997), 533(1-2), 153-159
CODEN: JORCAI; ISSN: 0022-328X
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The prepns. of A-β-Na7SiW9Nb3O40 and Na5[(η5-C5Me5)Rh·SiW9Nb3O40] are described. The water-soluble form of the Keggin-type trisubstituted heteropolyanion, A-β-SiW9Nb3O7-40, of interest as a polyoxoanion support for organometallic complexes, was isolated in **pure** form in 61% yield as its heptasodium salt with 16 waters of hydration. The polyoxoanion-supported organometallic complex as its all-sodium salt, [(η5-C5Me5)Rh·SiW9Nb3O40]5- was obtained in 21% yield as an anal. **pure**, homogeneous yellow-brown solid by the reaction of [(η5-C5Me5)Rh(CH3CN)3]2+ with the trisubstituted heteropolyanion SiW9Nb3O7-40 in CH3CN-DMSO. These all-sodium salts have required their own novel prepns. and **purifications**, and have never been derived directly from the known all-Bu4N+ salts of the corresponding Keggin heteropolyanions. **Compositional** characterization was accomplished by complete elemental analyses, TG/DTA, and FT-IR. Structural characterization in solution was achieved by **combination** of 1H, 13C and 183W NMR spectroscopies.

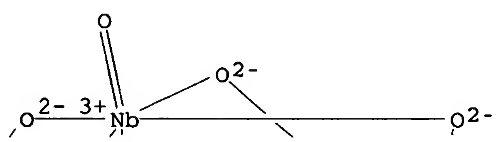
IT **192314-19-5P 192314-22-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 192314-19-5 HCAPLUS

CN Niobate(7-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]nona-
μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-,

heptasodium, hexadecahydrate (9CI) (CA INDEX NAME)

PAGE 1-A



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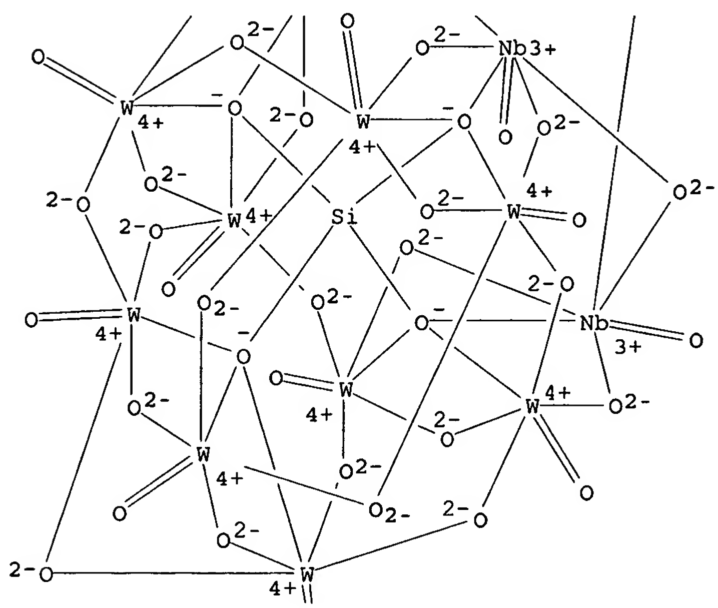


PAGE 3-A

●7 Na^+

●16 H_2O

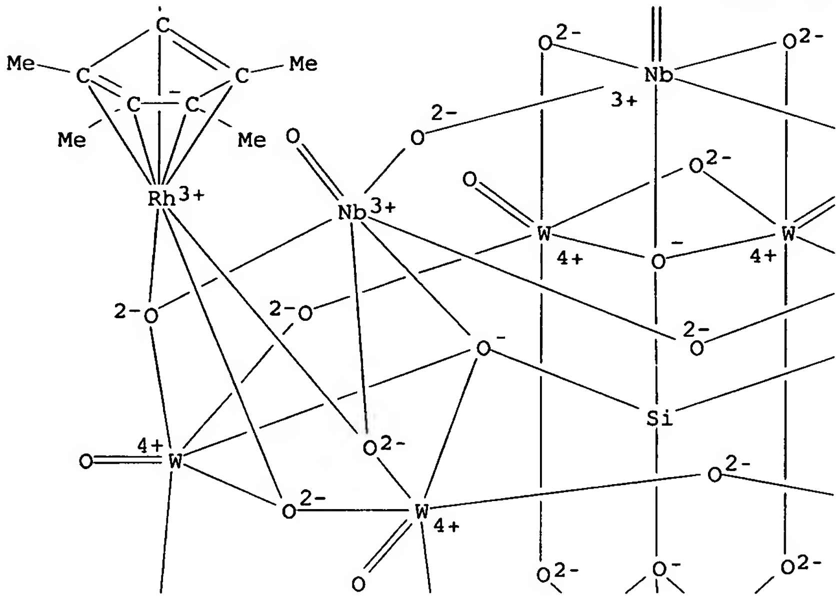
RN 192314-22-0 HCAPLUS
CN Niobate(5-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]hepta-
μ-oxotri-μ3-oxotrioxo[[(1,2,3,4,5-η)-1,2,3,4,5-
pentamethyl-2,4-cyclopentadien-1-yl]rhodate](tetradeca-μ-
oxononaoxononatungstate)tri-, pentasodium, compd. with
sulfinylbis[methane] (1:3), dihydrate (9CI) (CA INDEX NAME)

CM 1

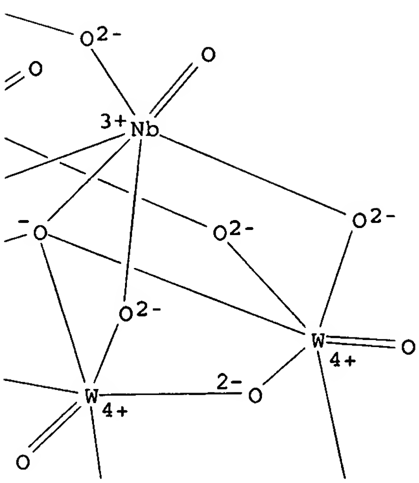
CRN 192314-21-9
CMF C10 H15 Nb3 O40 Rh Si W9 . 5 Na
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 2-B



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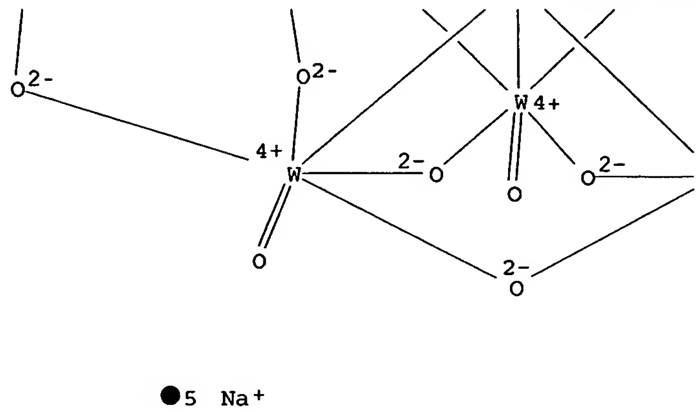

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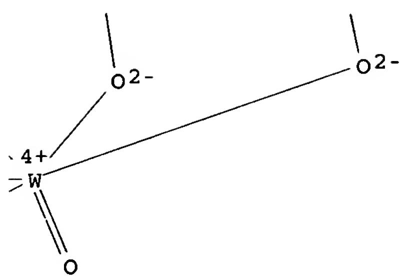
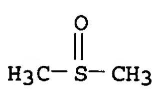


CM 2

CRN 67-68-5
CMF C2 H6 O S



CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 78
ST triniobium nonatungsten polyoxoanion Keggin type prepn; rhodium triniobium nonatungsten polyoxoanion Keggin type; tungsten rhodium sodium niobium **polyoxometallate** Keggin
IT **192314-19-5P 192314-22-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

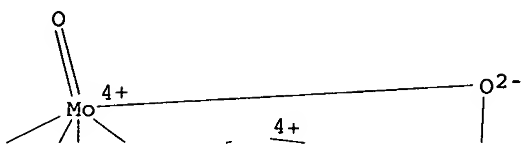
L114 ANSWER 41 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:375889 HCAPLUS
DOCUMENT NUMBER: 127:8415
TITLE: New reactive carbons for HD decomposition
AUTHOR(S): Walker, John E.; Rivin, Donald; Kendrick, Cyrus E.; Hill, Craig L.

CORPORATE SOURCE: Development Engineering Center, U. S. Army Natick Research, Natick, MA, 01760-5020, USA
SOURCE: Proceedings of the ERDEC Scientific Conference on Chemical and Biological Defense Research, Aberdeen Proving Ground, Md., Nov. 15-18, 1994 (1996), Meeting Date 1994, 821-828. Editor(s): Berg, Dorothy A. National Technical Information Service: Springfield, Va.
CODEN: 64NAAX
DOCUMENT TYPE: Conference
LANGUAGE: English

AB In this paper we report on the reactivity of HD simulants by catalytic carbon systems **formulated** by the incorporation of the heteropolyoxometalate, H5PV2Mo10O40 (POX) into microporous carbon. The activated carbon systems are; Ambersorb (Rohm & Haas), Maxsorb (Kansai) and Calgon PCB-G (Calgon Corp.). ESR studies indicate that the POX is strongly adsorbed to the surface of the carbons. Uing chloroethyl ethylsulfide (CEES) as an HD simulant, we found that the POX-carbons oxidized CEES in both acetonitrile and toluene solvent systems. GC/MS analyses of the reaction products showed only the presence of the sulfoxide of CEES with no evidence of the sulfone. Static vapor testing of the POX-carbons with CEES showed that the reactivity varies as a function of the water vapor introduced with the CEES vapor. Microflow calorimetry of the POX-carbons using trichloroethylene (TCE) as the adsorptive showed no appreciable decrease in the heats of adsorption and desorption when compared to the carbon controls. When the HD simulant tetrahydrothiophene (THT) was used as the adsorptive, there was evidence of a chemisorption reaction occurring along with the phys. adsorption process. The incorporation of **polyoxometalates** into microporous carbon supports should lead to a new generation of sorptive/reactive chemical protective materials.

IT **12293-21-9**
RL: CAT (Catalyst use); USES (Uses)
(new reactive carbons for HD decomposition)
RN 12293-21-9 HCAPLUS
CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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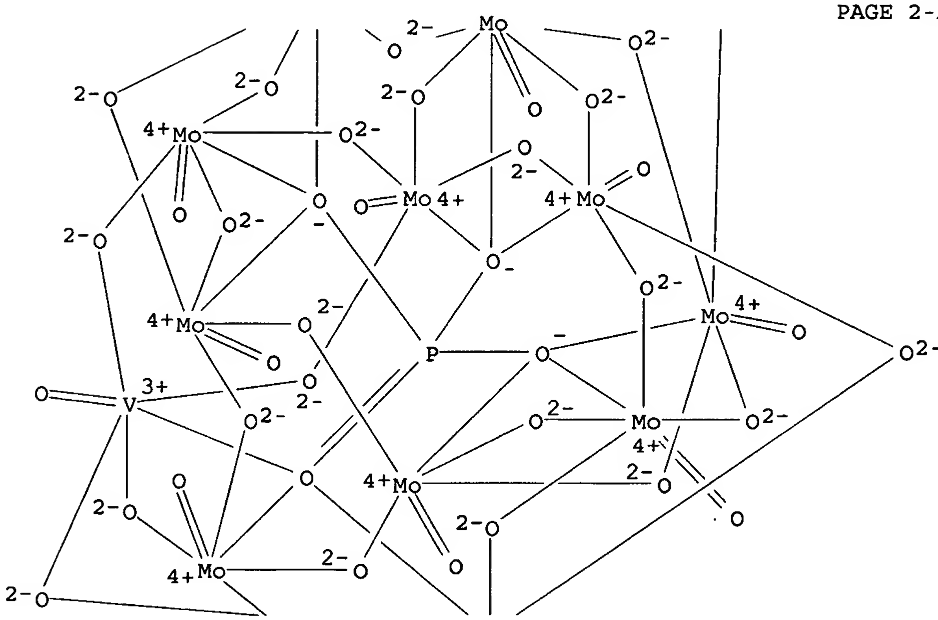

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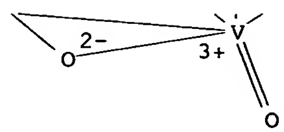
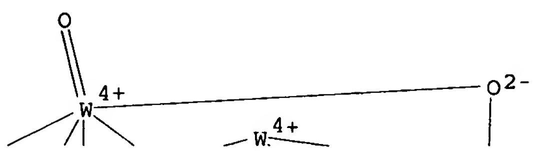


●5 H^+

CC 59-4 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 50
IT **12293-21-9**
RL: CAT (Catalyst use); USES (Uses)
(new reactive carbons for HD decomposition)

L114 ANSWER 42 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:737410 HCAPLUS
DOCUMENT NUMBER: 126:93902
TITLE: The interaction of nitrogen oxides with metal-oxygen cluster compounds (heteropoly oxometalates)
AUTHOR(S): Belanger, R.; Moffat, J. B.
CORPORATE SOURCE: Department of Chemistry and the Guelph-Waterloo Centre for Graduate Work in Chemistry, University of Waterloo, Waterloo, Ontario, Can.
SOURCE: Journal of Molecular Catalysis A: Chemical (1996), 114(1-3), 319-329
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB NO2 is sorbed by the solid heteropoly acids, the 1st sorbates producing HNO3 while those subsequently taken up remain strongly bound on the acid, ≤3 NO2/heteropoly anion. The sorption of NO2 depends on the elemental **composition** of the anions of the solid acids and hence on the acid strengths of these materials. The sorbed NO2 assocs. with both the surface and bulk protons to form HNO2+ thus demonstrating that NO2 is capable of penetrating into the crystallog. structure of the solid acid. Prior sorption of NO2 facilitates the takeup of NO which forms N2O3; 12-tungstophosphoric acid (HPW) supported on silica produces quant. different but qual. similar results. The microporous Al salt of HPW produces markedly different results when exposed to NO2 with the predominant product being N evidently resulting from the ammonium cation functioning as a source of the reductant ammonia.
IT **1343-93-7**, 12-Tungstophosphoric acid **12027-38-2**, 12-Tungstosilicic acid
RL: NUU (Other use, unclassified); USES (Uses)
(interaction of nitrogen oxides with metal-oxygen cluster compds.)
RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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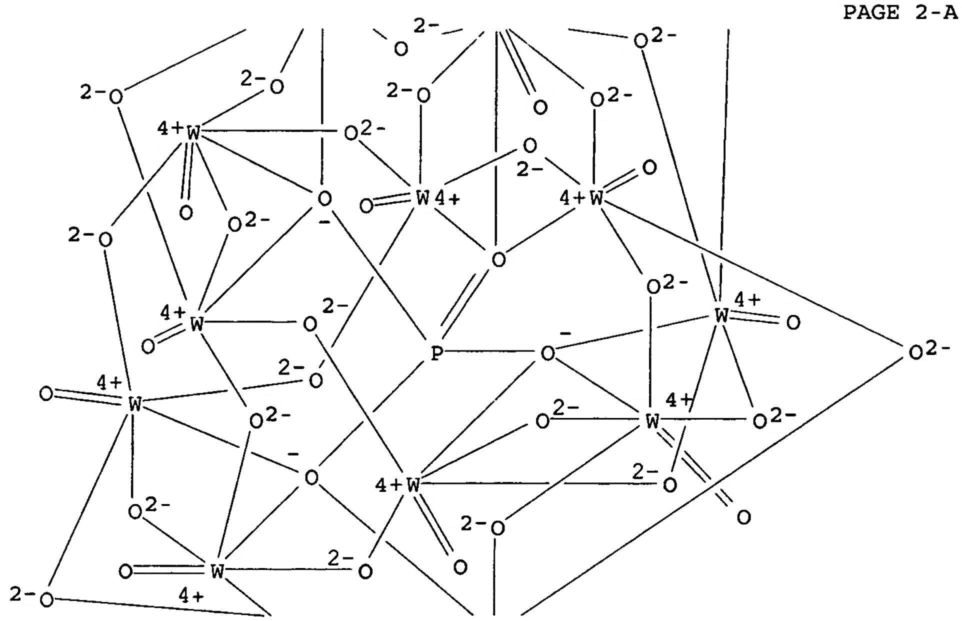
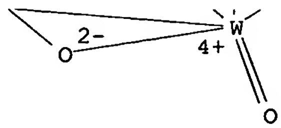


PAGE 3-A



● 3 H^+

RN 12027-38-2 HCAPLUS

CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

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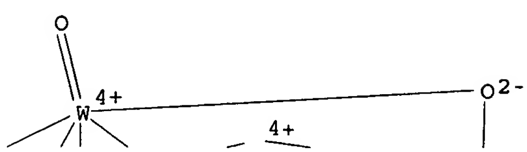

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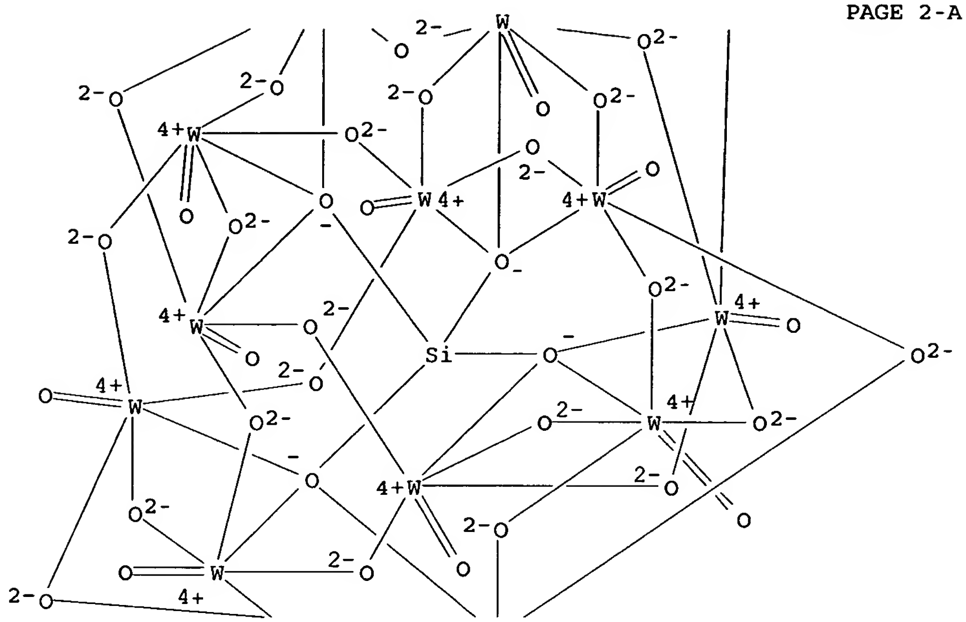

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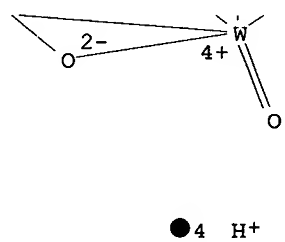

CC 59-4 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67
IT **1343-93-7**, 12-Tungstophosphoric acid **12027-38-2**, 12-Tungstosilicic acid
RL: NUU (Other use, unclassified); USES (Uses)
(interaction of nitrogen oxides with metal-oxygen cluster compds.)
REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L114 ANSWER 43 OF 64 HCAPLUS
ACCESSION NUMBER: 1996:410483 HCAPLUS
DOCUMENT NUMBER: 125:49278
TITLE: Method, **compositions**, and apparatus for treating and preventing respiratory viral infections with **polyoxometalate** aerosol
INVENTOR(S): Schinazi, Raymond F.; Hill, Craig L.
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 71 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

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     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
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     WO 9609764           A1    19960404    WO 1995-US11961
                                                                    1995
                                                                    0926
         W:  AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE,
             ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR,
             LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, TJ, TM
         RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR,
             IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
             GN, ML, MR, NE, SN, TD, TG
     US 5824706           A     19981020    US 1995-399700
                                                                    1995
                                                                    0303
     AU 9536366           A1    19960419    AU 1995-36366
                                                                    1995
                                                                    0926
PRIORITY APPLN. INFO.:                      US 1994-312561       A
                                                                    1994
                                                                    0926

                                            US 1995-399700       A
                                                                    1995
                                                                    0303

                                            WO 1995-US11961      W
                                                                    1995
                                                                    0926
```

AB Respiratory viral infections may be effectively prevented or treated by administering an aerosol spray comprising a **polyoxometalate** to the lungs. More than 200 **polyoxometalates** are claimed. The virus may be e.g. influenza A, influenza B, HIV-1, or respiratory syncytial virus.

IT **162958-09-0**
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** aerosols for treating and preventing respiratory viral infections)

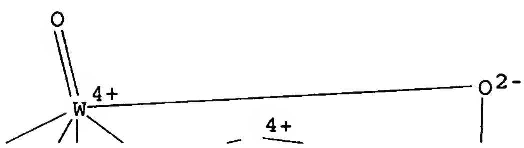
RN 162958-09-0 HCAPLUS

CN Niobate(7-), [μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, heptahydrogen, compd. with N,N-dimethylmethanamine (1:7) (9CI) (CA INDEX NAME)

CM 1

CRN 162958-08-9
CMF H . 1/7 Nb3 O40 Si W9
CCI CCS

PAGE 1-A



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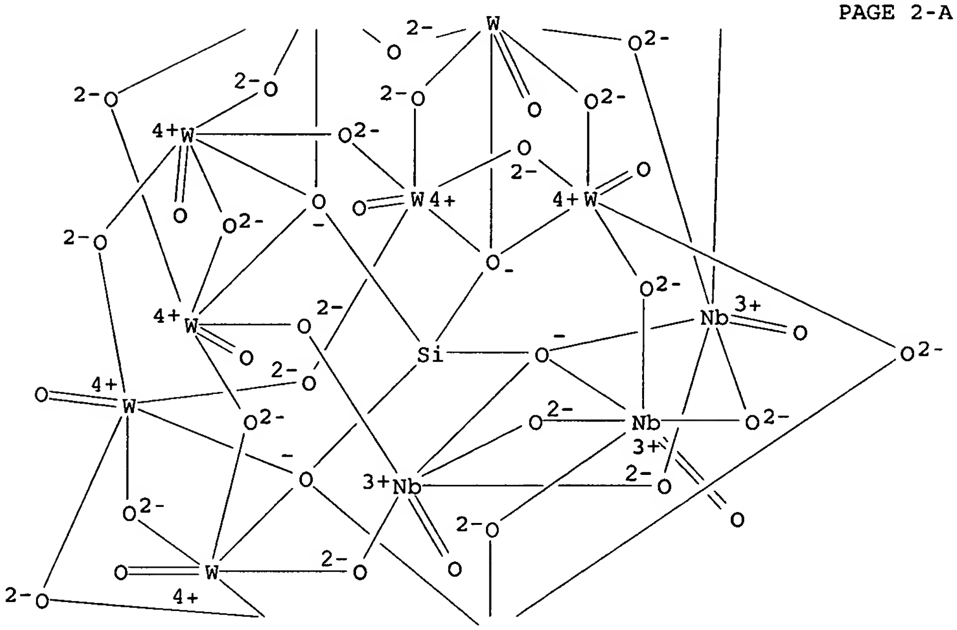

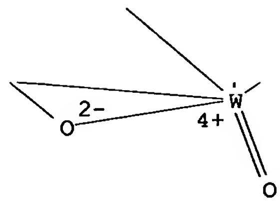

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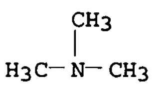
●7 H+

CM 2

CRN 75-50-3
CMF C3 H9 N



IC ICM A01N055-02
ICS A01N059-14; A01N059-16; A01N059-20; A61K031-28; A61K031-295; A61K031-30; A61K031-315; A61K033-22; A61K033-24; A61K033-26; A61K033-32; A61K033-34
CC 1-5 (**Pharmacology**)
Section cross-reference(s): 63
ST **polyoxometalate** aerosol respiratory virus infection; antiviral respiratory virus **polyoxometalate** aerosol
IT Virucides and Virustats
(**polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Heteropoly acids
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Respiratory tract
(disease, infection, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Virus, animal
(human immunodeficiency 1, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Virus, animal
(influenza A, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Virus, animal
(influenza B, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Virus, animal
(measles, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Virus, animal
(mumps, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Virus, animal
(parainfluenza 2, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Virus, animal
(parainfluenza 3, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)

IT Virus, animal
(respiratory syncytial, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT Pharmaceutical dosage forms
(sprays, **polyoxometalate** aerosols for treating and preventing respiratory viral infections)
IT 84750-84-5 **162958-09-0**
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometalate** aerosols for treating and preventing respiratory viral infections)

L114 ANSWER 44 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:774639 HCAPLUS
DOCUMENT NUMBER: 123:160817
TITLE: **Polyoxometallates** in the treatment of flavivirus infections
INVENTOR(S): Weigold, Helmut
PATENT ASSIGNEE(S): Commonwealth Scientific and Industrial Research Organization, Australia
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9511033	A1	19950427	WO 1994-AU641		19941021
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ					
RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
AU 9479853	A1	19950508	AU 1994-79853		19941021
PRIORITY APPLN. INFO.:			AU 1993-1950	A	19931022
			WO 1994-AU641	W	19941021

AB Pharmaceutical **compns.** containing **polyoxometallates** and pharmaceutically acceptable derivs. thereof are disclosed. Also disclosed is the use of such compds. or **compns.** in therapy for the treatment or prophylaxis of infections by viruses which are confirmed or probable members of the family Flaviviridae, including Hepatitis C. In an assay using type 2 dengue virus-infected Vero cells, $K_6[P_2V_2W_{16}O_{62}]\cdot 40H_2O$ had an inhibitory concentrate of 5-10 μM.
IT **110390-83-5P 133348-29-5P 133348-30-8P**
167308-24-9P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation);

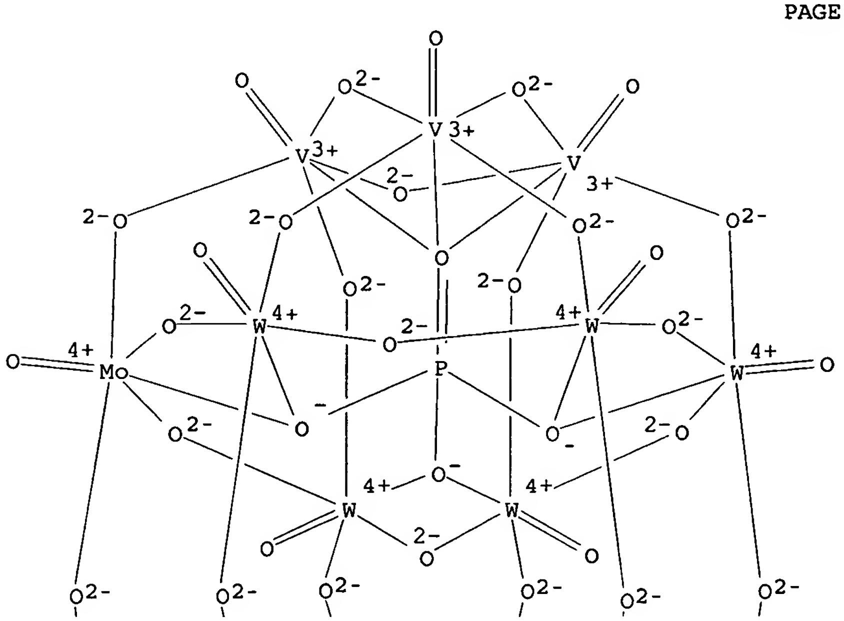
USES (Uses)
(**polyoxometallates** for treatment of flavivirus
infections)
RN 110390-83-5 HCAPLUS
CN Vanadate(7-), [heptacosa-μ-oxopentadecaoxo[μ9-[phosphato(3-)-
κO:κO:κO:κO':κO':κO'':κO
'':κO''':κO''']]pentadecatungstate]octa-μ-
oxooxo(μ-oxodioxodimolybdate)[μ9-[phosphato(3-)-
κO:κO:κO:κO':κO':κO'':κO
'':κO''':κO''']]-, heptapotassium (9CI) (CA INDEX
NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 133348-29-5 HCAPLUS
CN Vanadate(8-), [heptacosa-μ-oxopentadecaoxo[μ9-phosphato(3-)-
O:O:O:O':O':O'':O'':O''':O''']-pentadecatungstate]nona-μ-
oxodioxo(oxomolybdate)[μ9-[phosphato(3-)-
O:O:O:O':O':O'':O'':O''':O''']]di-, octapotassium (9CI) (CA INDEX
NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 133348-30-8 HCAPLUS
CN Vanadate(8-), [nonacosa-μ-oxohexadecaoxo[μ9-[phosphato(3-)-
κO:κO:κO:κO':κO':κO'':κO
'':κO''':κO''']]hexadecatungstate]hepta-μ-
oxodioxo[μ9-[phosphato(3-)-κO:κO:κO:κO'
:κO':κO'':κO'':κO''':κO''']]di-,
octapotassium (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 167308-24-9 HCAPLUS
CN Vanadate(9-), dodeca-μ-oxotrioxo(oxomolybdate)[μ9-
[phosphato(3-)-O:O:O:O':O':O'':O'':O''':O''']][tetracosa-μ-
oxotetradecaoxo[μ9-[phosphato(3-)-O:O:O:O':O':O'':O'':O''':O'''
]]tetradecatungstate]tri-, nonapotassium (9CI) (CA INDEX NAME)

PAGE 1-A



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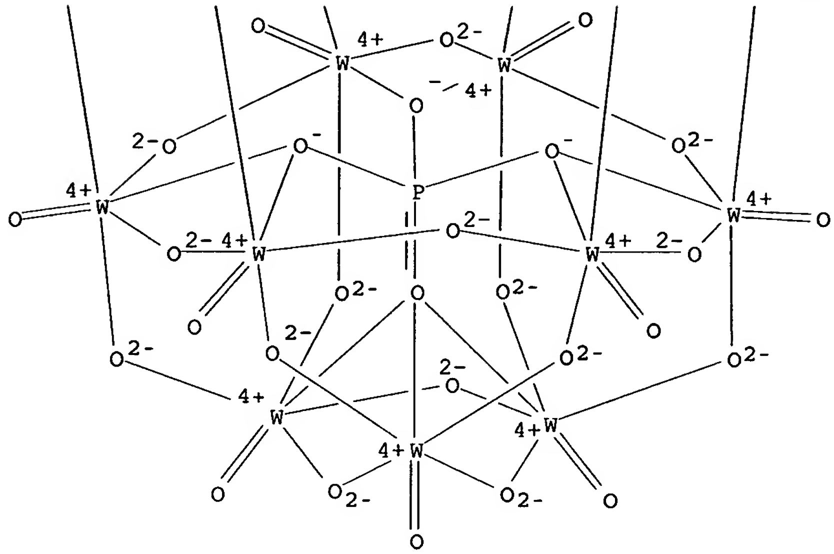


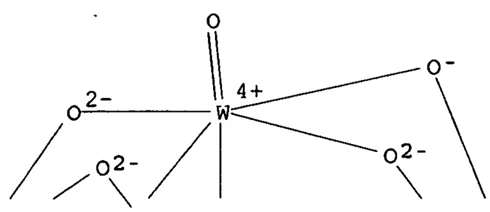
PAGE 3-A

IT **139631-93-9P**
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polyoxometallates** for treatment of flavivirus infections)

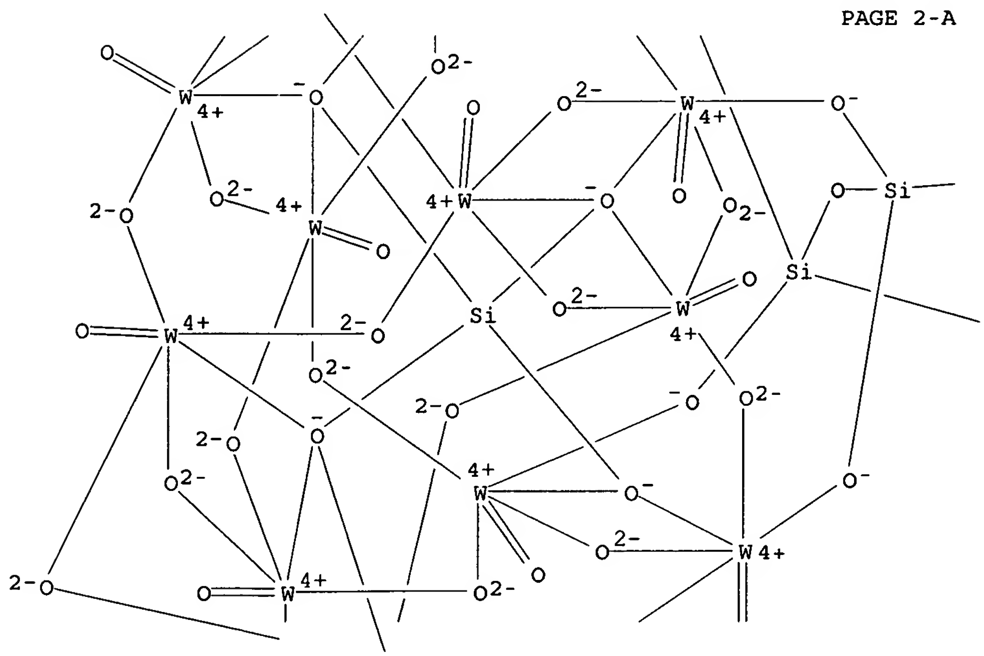
RN 139631-93-9 HCAPLUS

CN Tungstate(4-), [μ11-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''']]eicosa-μ-oxoundecaoxo[μ4-[[4,4'-[1,1,3,3-tetra(hydroxy-κO)-1,3-disiloxanediyl]bis[butanenitrilato]](4-)]]undeca-, tetracesium (9CI) (CA INDEX NAME)

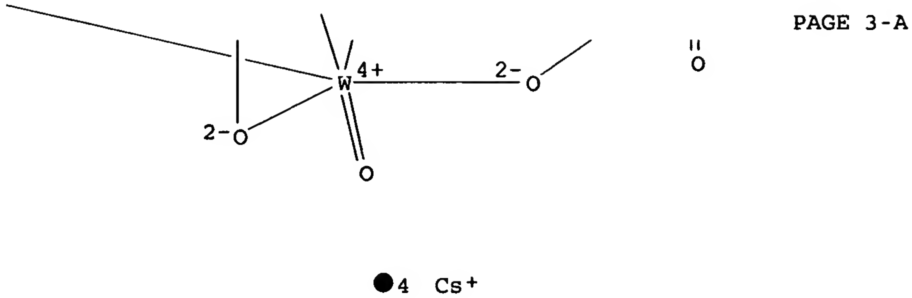
PAGE 1-A



PAGE 2-A



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



IC ICM A61K033-24
CC 1-5 (**Pharmacology**)
Section cross-reference(s): 63, 78
ST **polyoxometallate** flavivirus infection treatment
IT Pharmaceutical dosage forms
Virucides and Virustats
(**polyoxometallates** for treatment of flavivirus infections)
IT Virus, animal
(dengue 2, **polyoxometallates** for treatment of flavivirus infections)
IT Virus, animal
(flavi-, **polyoxometallates** for treatment of flavivirus infections)
IT Heteropoly acids
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tungstates, **polyoxometallates** for treatment of flavivirus infections)
IT 110313-16-1P **110390-83-5P** 111933-31-4P 133348-21-7P **133348-29-5P** **133348-30-8P** 139381-06-9P **167308-24-9P** 167308-27-2P 167308-29-4P 167308-30-7P 167308-31-8P 167308-32-9P 167308-34-1P, Iron sodium tungsten oxide silicate ($Fe5Na5W8O32(SiO4)$) 167308-35-2P 167308-36-3P 167308-37-4P 167308-38-5P 167397-05-9P 167397-06-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polyoxometallates** for treatment of flavivirus infections)
IT 140186-99-8
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**polyoxometallates** for treatment of flavivirus infections)
IT 6834-92-0 7558-80-7, Sodium dihydrogen phosphate 7646-79-9, Cobalt chloride, reactions 7699-43-6 10421-48-4, Ferric nitrate 13472-45-2 64684-57-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(**polyoxometallates** for treatment of flavivirus infections)
IT 63950-53-8P 102073-48-3P 114594-66-0P 139631-90-6P **139631-93-9P** 150923-48-1P 152166-48-8P 167308-25-0P 167308-26-1P 167308-28-3P 167308-33-0P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polyoxometallates** for treatment of flavivirus infections)

L114 ANSWER 45 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:751176 HCAPLUS
DOCUMENT NUMBER: 123:267525
TITLE: Synthetic and catalytic studies of inorganically pillared and organically pillared layered double hydroxides
AUTHOR(S): Don Wang, J.; Serrette, Genevieve; Tian, Ying; Clearfield, Abraham
CORPORATE SOURCE: Department of Chemistry, Texas A and M University, College Station, TX, 77843, USA
SOURCE: Applied Clay Science (1995), 10(1-2), 103-15
CODEN: ACLSER; ISSN: 0169-1317
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB By using freshly prepared or thoroughly wet layered double hydroxides (LDHs), or by copptg. the LDHs in the presence of the pillaring anions, we have synthesized and performed a catalytic study on a large number of pillared HT anionic clays. The metal cations used in the layers include Al3+, Cr3+, Fe3+, Mg2+, Ni2+, Zn2+, Co2+, Fe2+, Cu2+, Ba2+, and Ca2+. Pillaring was achieved with an extensive variety of heteropolyoxometalates having the Keggin structure, as well as some other larger heteropolyoxometalate anions. The product was usually a **mixture** of one phase with an ideally pillared structure and another phase containing defects in the layers; defects that were created during the pillaring reaction. Hexacyanoferrate(III) was also used as a pillaring anion in a **clean** reaction that provides an example of LDHs pillared with organometallic species. The organic pillars, [O3P-C6H4-PO3]4-, [O3P-C6H4-C6H4-PO3]4-, and [O3P-C6H4-C6H4-C6H4-PO3]4-, first formed intercalates with d-spacings exactly equal to the sum of the height of the pillar and the thickness of the LDH layer. These intercalates, in turn, dehydrate easily to yield lower d-spacing compds. in which the organic pillars are, presumably, fixed onto the layers through P-O-M bonds. The catalysis tests of **polyoxometalate**-pillared LDHs on isopropanol showed high levels of conversion, generally enhanced acid activity, and a gradual change in selectivity with respect to dehydrogenation vs. dehydration. The selectivity data are presented in correlation with the **composition** of the LDH layers.
IT **144317-57-7 144435-43-8 169052-67-9**
169052-73-7 169052-74-8
RL: CAT (Catalyst use); USES (Uses)
(synthetic and catalytic studies of inorganically pillared and organically pillared layered double hydroxides)
RN 144317-57-7 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tri-, magnesium (OC-6-11)-hexahydroxyaluminate(3-) hydroxide (1:30:6:36) (9CI) (CA INDEX NAME)

CM 1

CRN 63454-68-2
CMF O40 P V3 W9
CCI CCS

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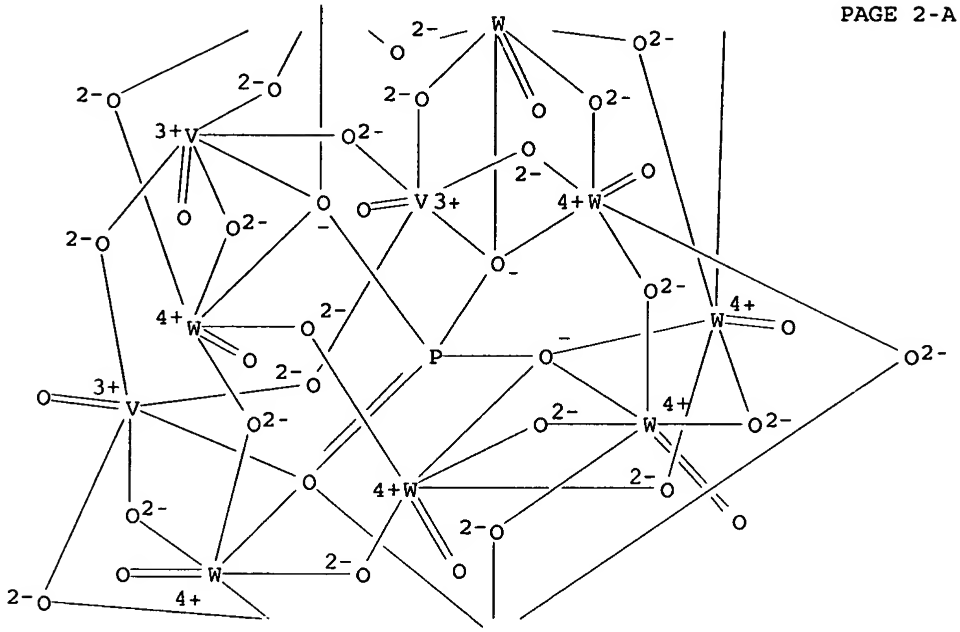
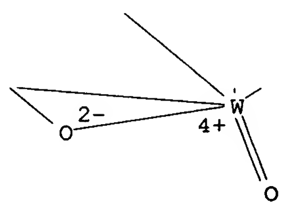


PAGE 2-A



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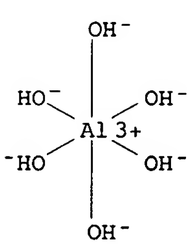
CM 2

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



RN 144435-43-8 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tri-, magnesium (OC-6-11)-hexahydroxyaluminate(3-) (1:12:6) (9CI) (CA INDEX NAME)

CM 1

CRN 63454-68-2
CMF O40 P V3 W9
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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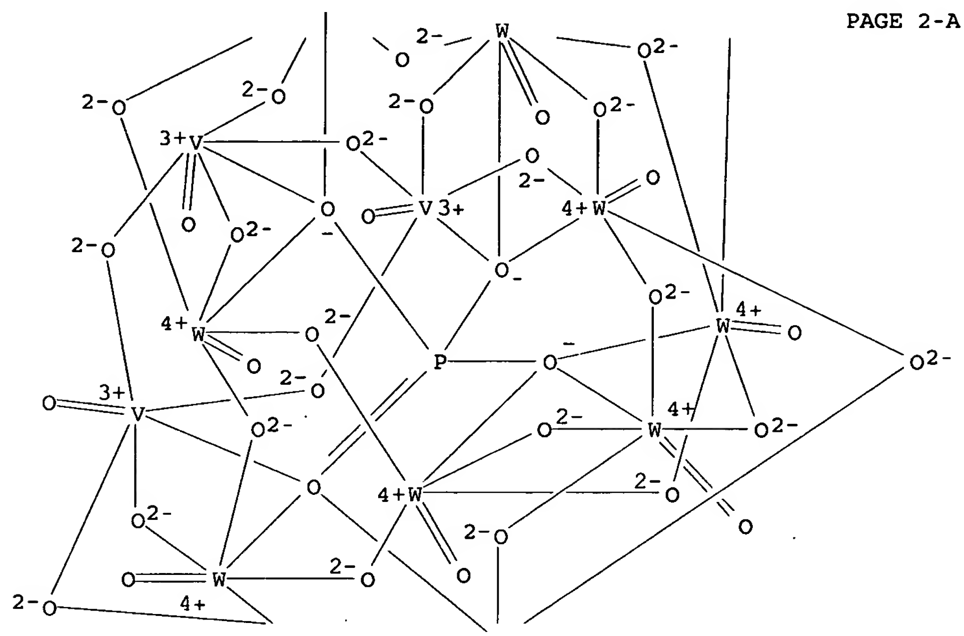

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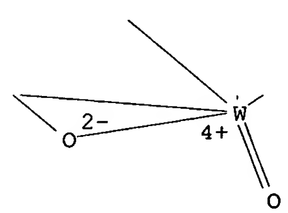

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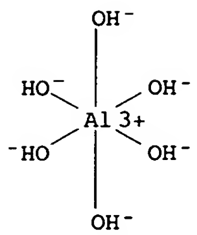
CM 2

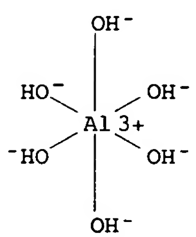
CRN 18893-33-9
CMF Al H6 O6
CCI CCS



RN 169052-67-9 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca-, magnesium (OC-6-11)-hexahydroxyaluminate(3-) hydroxide (1:12:3:12) (9CI) (CA INDEX NAME)

CM 1

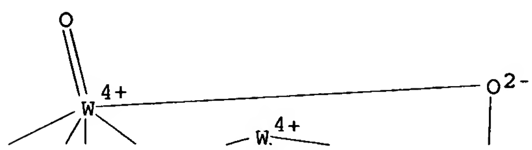
CRN 18893-33-9
CMF Al H6 O6
CCI CCS



CM 2

CRN 12534-77-9
CMF O40 P W12
CCI CCS

PAGE 1-A



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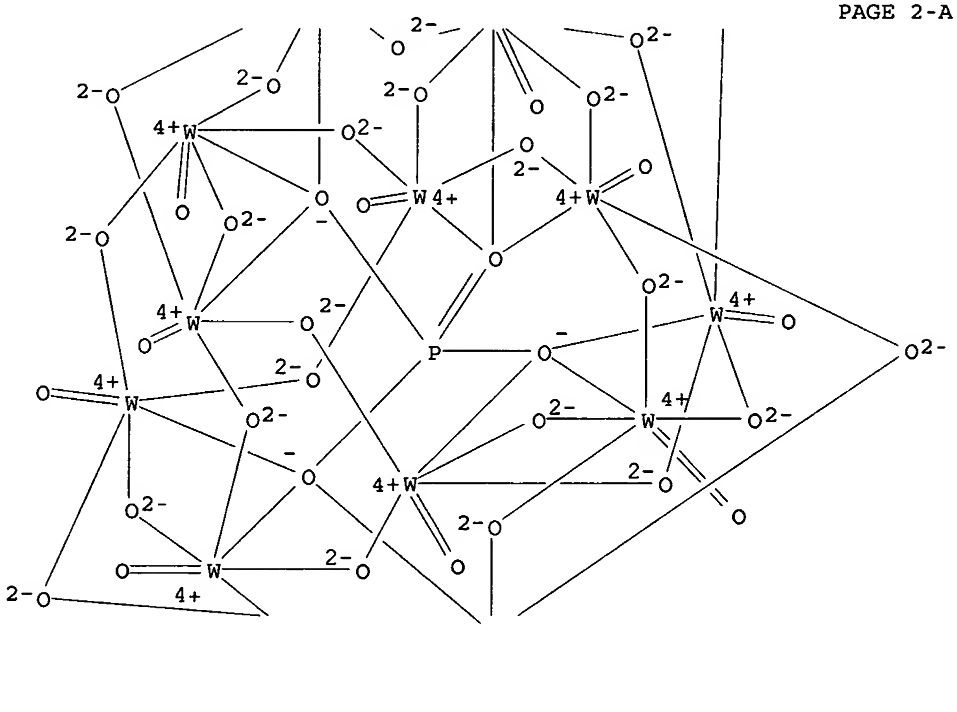

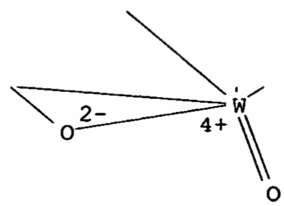

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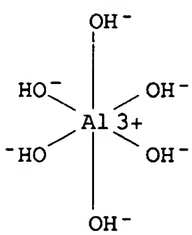
RN 169052-73-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca-, magnesium (OC-6-11)-hexahydroxyaluminate(3-) hydroxide (1:9:3:6) (9CI) (CA INDEX NAME)

CM 1

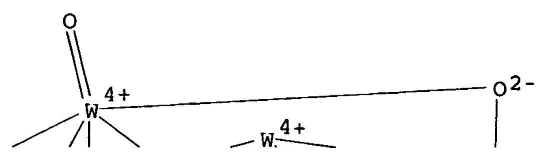
CRN 18893-33-9
CMF Al H6 O6
CCI CCS



CM 2

CRN 12534-77-9
CMF O40 P W12
CCI CCS

PAGE 1-A



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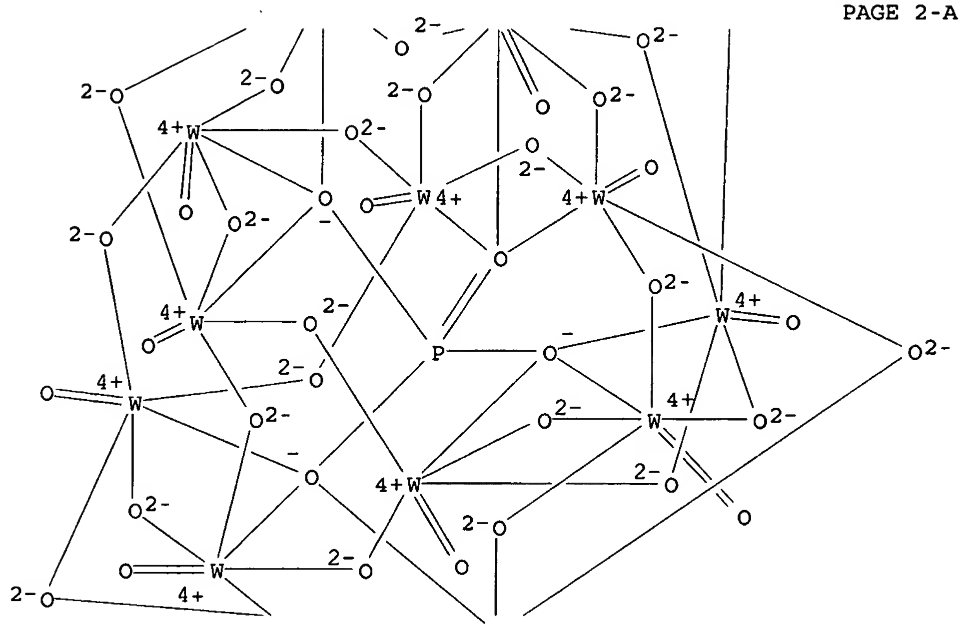

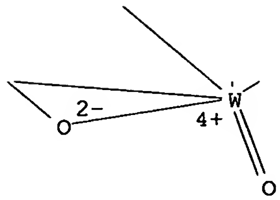

RN 169052-74-8 HCAPLUS

CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tri-, zinc (OC-6-11)-hexahydroxyaluminate(3-) hydroxide (1:18:6:12) (9CI) (CA INDEX NAME)

CM 1

CRN 63454-68-2

CMF O40 P V3 W9

CCI CCS

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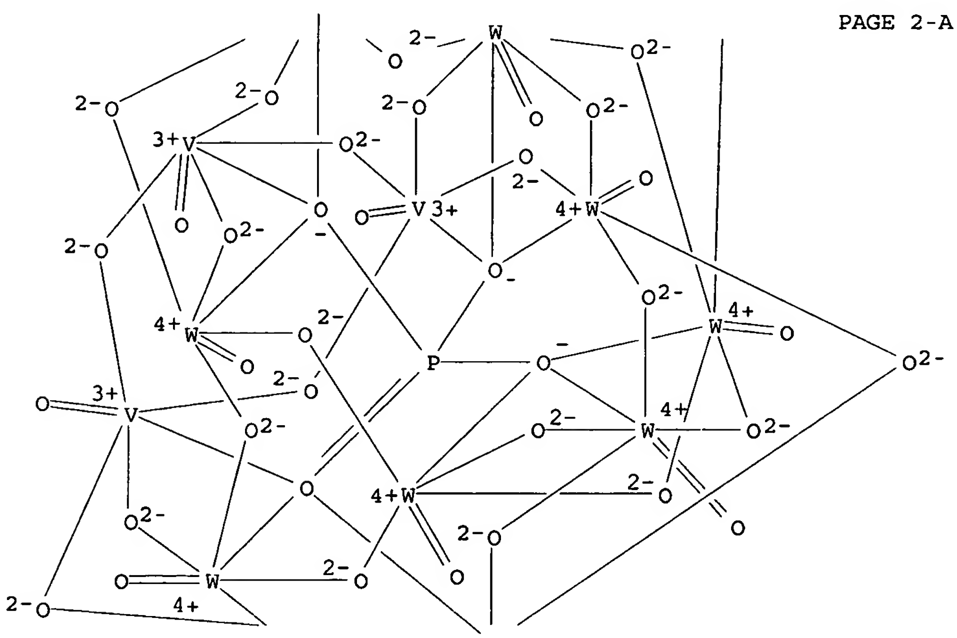
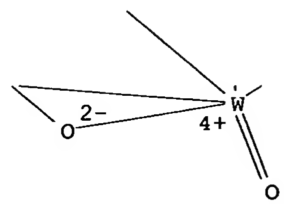
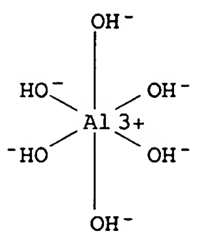




PAGE 3-A

CM 2

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



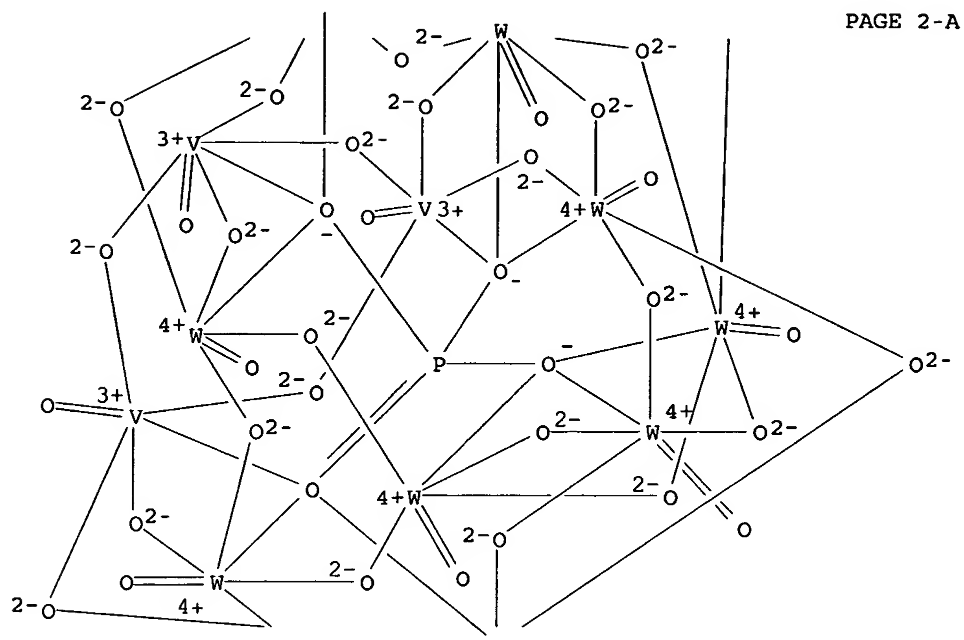
IT **169052-71-5P 169052-72-6P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(synthetic and catalytic studies of inorganically pillared and organically pillared layered double hydroxides)
RN 169052-71-5 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tri-, nickel(2+) (OC-6-11)-hexahydroxyaluminate(3-) hydroxide (1:30:6:36) (9CI) (CA INDEX NAME)

CM 1

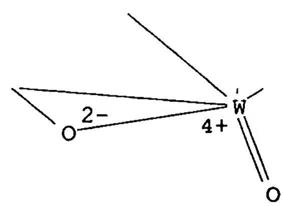
CRN 63454-68-2
CMF O40 P V3 W9
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A

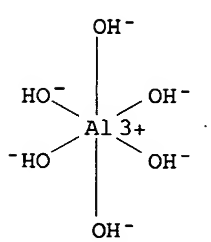


PAGE 3-A



CM 2

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



RN 169052-72-6 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tri-, copper(2+) (OC-6-11)-hexahydroxyaluminate(3-) (1:12:6) (9CI) (CA INDEX NAME)

CM 1

CRN 63454-68-2
CMF O40 P V3 W9
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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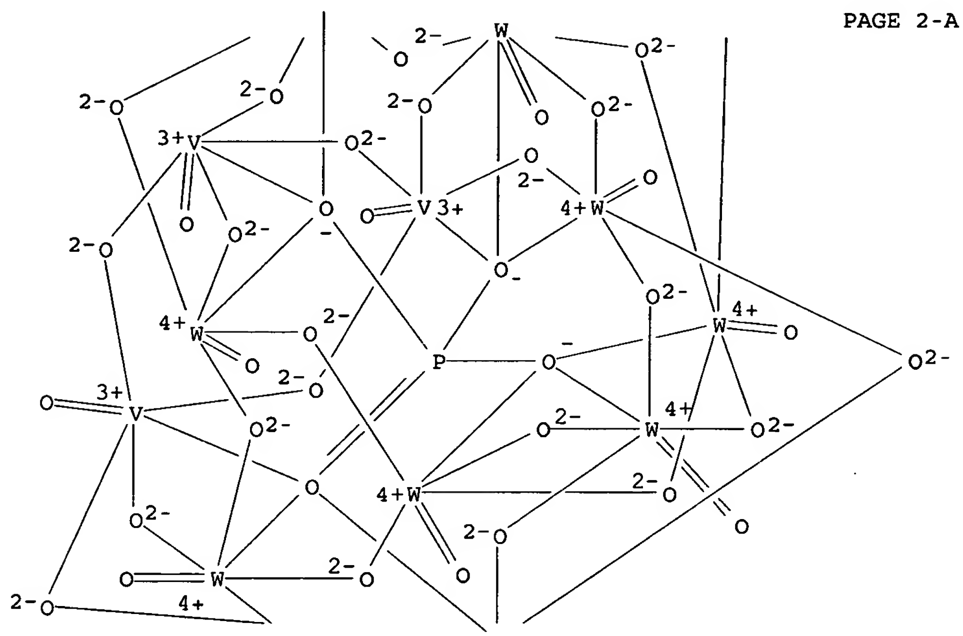
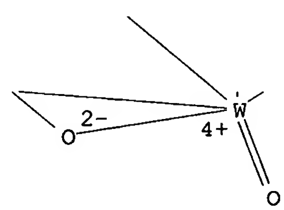
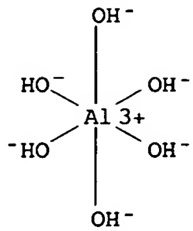


PAGE 3-A



CM 2

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 53, 78

IT 13408-62-3, Hexacyanoferrate(III) 69048-26-6 69048-27-7, Aluminum magnesium carbonate hydroxide ($Al_2Mg_4(CO_3)(OH)_{12}$) **144317-57-7** **144435-43-8** **169052-67-9** 169052-68-0 169052-69-1 169052-70-4 **169052-73-7** **169052-74-8** 169112-15-6 169112-16-7 169112-17-8 169112-18-9
RL: CAT (Catalyst use); USES (Uses)
(synthetic and catalytic studies of inorganically pillared and organically pillared layered double hydroxides)

IT **169052-71-5P** **169052-72-6P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(synthetic and catalytic studies of inorganically pillared and organically pillared layered double hydroxides)

L114 ANSWER 46 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:574425 HCAPLUS
DOCUMENT NUMBER: 123:47421
TITLE: Of therapy, **toxicity** and tungstates: the anti-retroviral pharmacology of **polyoxometalates**
AUTHOR(S): Blasecki, John W.
CORPORATE SOURCE: Viral Diseases Research, DuPont Merck Pharmaceutical Company, Glenolden, PA, 19036, USA
SOURCE: Topics in Molecular Organization and Engineering (1994), 10, 373-85
CODEN: TMOEE7; ISSN: 0927-0817
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Based upon activity in a number of in vitro assays of anti-retroviral activity, E3925 (alphavanadoundecatungstoboric acid, hexa-potassium salt ($K_6[BVW_{11}O_{40}]\cdot xH_2O$)) was elected for further evaluation as a potential candidate for clin. treatment of HIV/AIDS. When tested in mice against Friend leukemia virus (FLV), which was used as a surrogate model of retrovirus-induced immuno-deficiency disease, E3925 was as efficacious as AZT and superior to HPA-23. Treatment of FLV-infected mice could be delayed up to 48 h post-infection with no significant loss of antiviral activity. Careful manipulation of loading dose, maintenance dose and administration interval demonstrated that anti-retroviral efficacy could be maintained by administering E3925 as infrequently as every two weeks. In **combination** therapy expts., E3925 was both compatible and additive with AZT in reducing the severity of FLV-induced disease in mice. Further clin. development of this compound was prevented by treatment-related coagulopathy.

IT **93253-86-2**
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study);

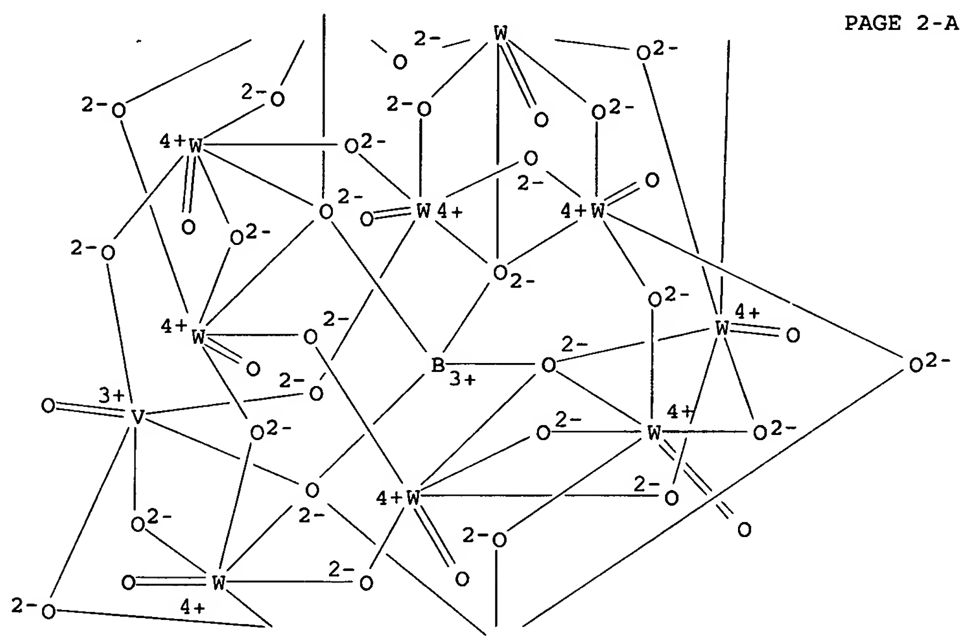
USES (Uses)
(anti-retroviral pharmacol. of **polyoxometalates**)

RN 93253-86-2 HCAPLUS

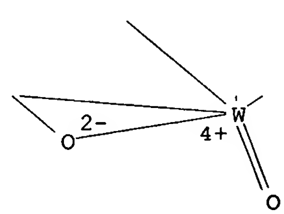
CN Vanadate(6-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●6 K^+

IT **12773-19-2 108834-31-7 140156-49-6**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(anti-retroviral pharmacol. of **polyoxometalates**)

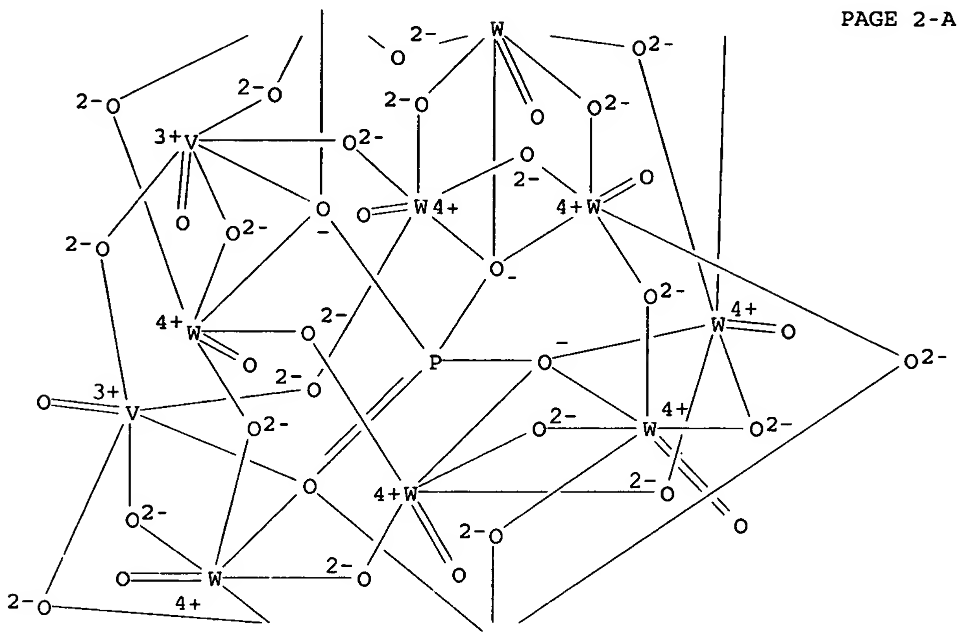
RN 12773-19-2 HCAPLUS

CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''

':O''']]di-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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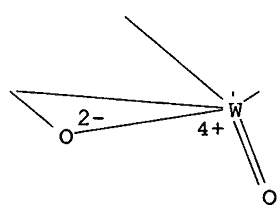
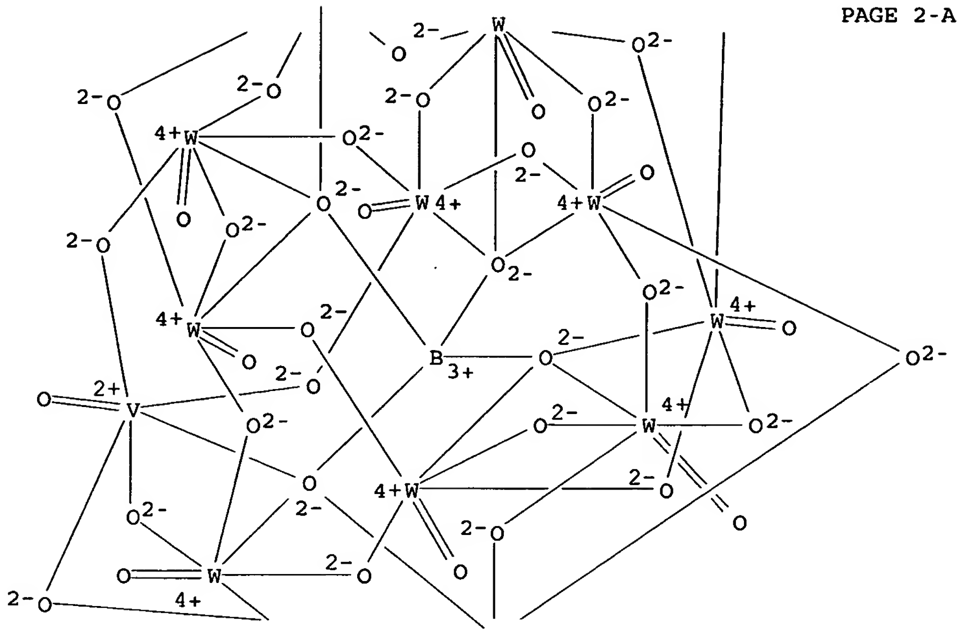


●5 K^+

RN 108834-31-7 HCAPLUS
CN Vanadate(7-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]-, heptapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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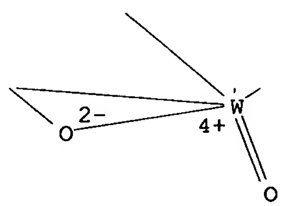
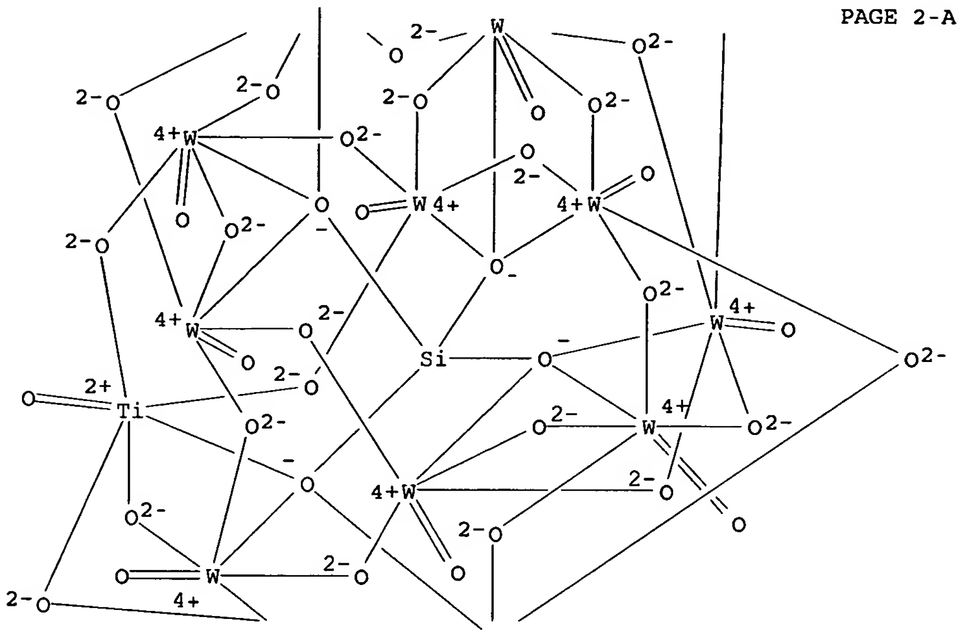


●7 K^+

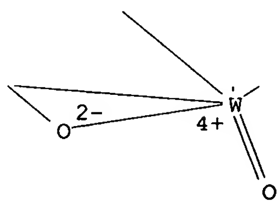
RN 140156-49-6 HCAPLUS
CN Titanate(6-), (eicosa-μ-oxoundecaoxoundecatungstate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetra-μ-oxooxo-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



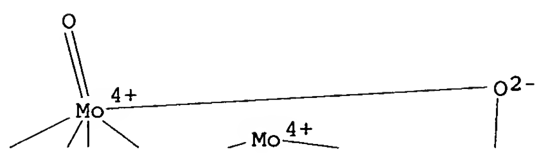
●6 K^+

CC 1-5 (**Pharmacology**)
ST antiretroviral **polyoxometalate** E3925 vanadoundecatungstoborate
IT Virucides and Virustats
(anti-retroviral pharmacol. of **polyoxometalates**)
IT Virus, animal
(retro-, anti-retroviral pharmacol. of **polyoxometalates**)
IT **93253-86-2**
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(anti-retroviral pharmacol. of **polyoxometalates**)
IT **12773-19-2 108834-31-7 140156-49-6**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(anti-retroviral pharmacol. of **polyoxometalates**)
IT 30516-87-1, Azt
RL: BAC (Biological activity or effector, except adverse); BSU

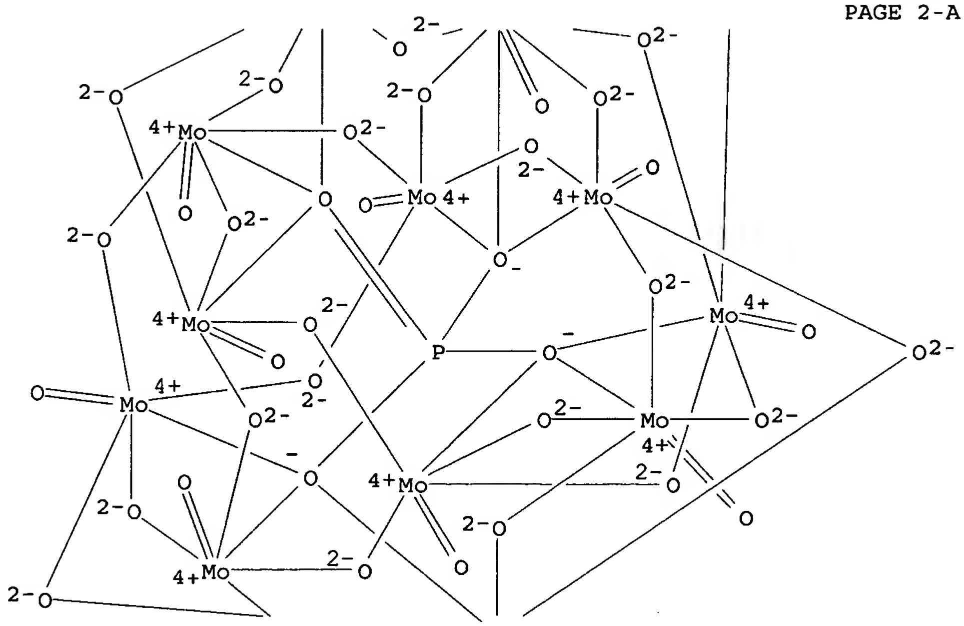
(Biological study, unclassified); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(anti-retroviral pharmacol. of **polyoxometalates** and)
IT 101346-86-5
RL: BAC (Biological activity or effector, except adverse); BSU
(Biological study, unclassified); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(santi-retroviral pharmacol. of **polyoxometalates**)

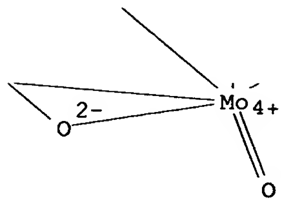
L114 ANSWER 47 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:691255 HCAPLUS
DOCUMENT NUMBER: 121:291255
TITLE: **polyoxometalates**: a class of compounds with remarkable topology
AUTHOR(S): Del Gado, O.; Dress, A.; Mueller, A.; Pope, M. T.
CORPORATE SOURCE: Dep. Math., Univ. Bielefeld, Bielefeld, D-33501, Germany
SOURCE: Molecular Engineering (1993), 3(1-3), 9-28
CODEN: MOLEEV; ISSN: 0925-5125
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Structures of **polyoxometalates** frequently are discovered to be based upon regular convex polyhedra, including the Platonic and Archimedean solids. A topol. approach involving barycentric subdivision of the faces of such polyhedra, leads to their description as **combinations** of triangular building blocks assembled according to systematic rules. An anal. of the Keggin structure of [Mo12O36(PO4)]3-, is presented. It is the only spherical polyhedral structure of T symmetry built up from 6 8-gons and 8 6-gons. Similarly, there is only 1 spherical polyhedral structure of T symmetry built up from 8 6-gons and twenty-4 4-gons satisfying also some obvious chemical **combinatorial** constraints. Such a structure is observed for [H9V18O42(VO4)]6-. Anal. of possible structures of lower symmetry (D3, D4), e.g. as observed for [V15O36(Hal)]6- and [H4V18O42(Hal)]9-, reveals the onset of **combinatorial explosion.** For example, there are 67 D3-structures satisfying the chemical condition.
IT **12379-13-4**, Molybdophosphate (Mo12O36(PO4)3-)
RL: RCT (Reactant); RACT (Reactant or reagent)
(topol. of)
RN 12379-13-4 HCAPLUS
CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A





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CC 78-7 (Inorganic Chemicals and Reactions)
ST **polyoxometalate** classification topol; barycentric subdivision **polyoxometalate; combinatorial explosion polyoxometalate**; Keggin **polyoxometalate** topol
IT Molecular topology
(of **polyoxometalates**)
IT **12379-13-4**, Molybdophosphate (Mo12O36(PO4)3-)
158868-03-2 158868-04-3, Vanadate (V17O415-) 158908-66-8
158908-68-0 158916-13-3 158916-14-4 158925-41-8
158925-53-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(topol. of)

L114 ANSWER 48 OF 64 HCAPLUS
ACCESSION NUMBER: 1994:664655 HCAPLUS
DOCUMENT NUMBER: 121:264655
TITLE: A More General Approach to Distinguishing "Homogeneous" from "Heterogeneous" Catalysis: Discovery of Polyoxoanion- and Bu4N+-Stabilized, Isolable and Redissolvable, High-Reactivity Ir.apprx.190-450 Nanocluster Catalysts
AUTHOR(S): Lin, Yin; Finke, Richard G.
CORPORATE SOURCE: Department of Chemistry, Colorado State University, Ft. Collins, CO, 80523, USA
SOURCE: Inorganic Chemistry (1994), 33(22), 4891-910
CODEN: INOCAJ; ISSN: 0020-1669
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A more general approach to distinguishing between so-called homogeneous vs. heterogeneous catalysts has been developed and intrinsically tested in answering the question "what is the true catalyst in the active hydrogenation system which evolves from cyclohexene, hydrogen, and the discrete, polyoxoanion-supported Ir(I) catalyst precursor (Bu4N)5Na3[(1,5-COD)Ir·P2W15Nb3O62]". The approach developed and utilized consists of four categories of expts.: (i) catalyst isolation and characterization studies, with an emphasis initially on TEM; (ii) initial kinetic studies, emphasizing whether or not the isolated catalyst can account for the observed kinetics, especially any induction period seen, and whether or not the reaction exhibits a ±10% reproducible rate; (iii) quant. phenomenol. catalyst **poisoning** and recovery expts.; (i.v.) addnl. kinetic and mechanistic studies and chemical tests, all interpreted with strict adherence to the principle that the correct description of the catalyst (i.e., the correct mechanism) will explain all of the data. The present approach has identified a previously unknown type of hybrid homogeneous-heterogeneous, Ir.apprx.190-450·polyoxoanion/Bu4N+ catalyst of average **composition** [Ir(0).apprx.300(P4W30Nb6O12316-).apprx.33](Bu4N).apprx.300Na.apprx.233. A min. mechanistic scheme for the catalyst's evolution, consisting of the autocatalytic generation of the Ir.apprx.190-450 nanoclusters, is shown to account for all of the observed results, including the findings of the rate-enhancing effects of H+, H2O,

and acetone impurities that were puzzling in the earlier stages of this work.

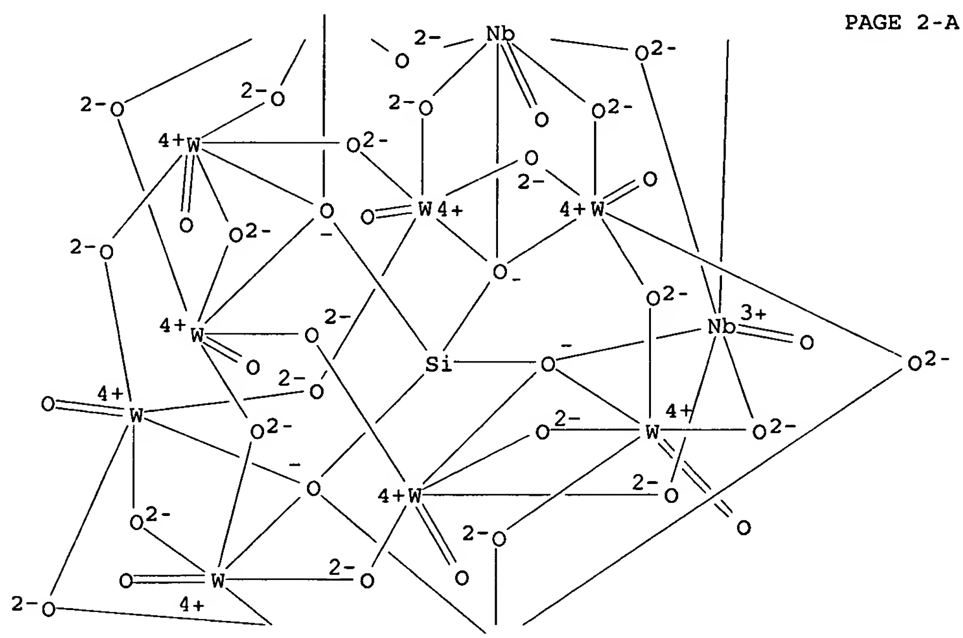
IT **92762-46-4P**
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(preparation and characterization of polyoxoanion- and tetrabutylammonium-stabilized iridium nanocluster hydrogenation catalysts)

RN 92762-46-4 HCAPLUS

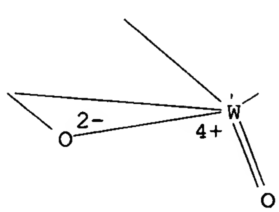
CN Niobate(7-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri- (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



IT **153299-14-0**
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(preparation and characterization of polyoxoanion- and tetrabutylammonium-stabilized iridium nanocluster hydrogenation

catalysts)
RN 153299-14-0 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, sodium [[(1,2,5,6-η)-1,5-cyclooctadiene]iridate][μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]hepta-μ-oxotri-μ3-oxotrioxo[tetradeca-μ-oxononaoxononatungstate]triniobate(6-) (4:2:1) (9CI) (CA INDEX NAME)

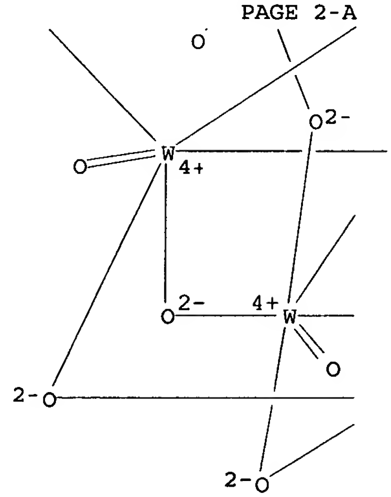
CM 1

CRN 153299-12-8
CMF C8 H12 Ir Nb3 O40 Si W9
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

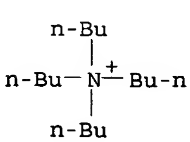
PAGE 2-A



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

CM 2

CRN 10549-76-5
CMF C16 H36 N



CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction

Mechanisms)
Section cross-reference(s): 22, 78

IT 7439-88-5DP, Iridium, nanoclusters **92762-46-4P**
114691-25-7P
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(preparation and characterization of polyoxoanion- and tetrabutylammonium-stabilized iridium nanocluster hydrogenation catalysts)

IT 152075-49-5 **153299-14-0**
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(preparation and characterization of polyoxoanion- and tetrabutylammonium-stabilized iridium nanocluster hydrogenation catalysts)

L114 ANSWER 49 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:525210 HCAPLUS
DOCUMENT NUMBER: 121:125210
TITLE: Heteropolytungstates as antiviral agents
INVENTOR(S): Weigold, Helmut; Bartholomeusz, Angeline Ingrid; Marcuccio, Sebastian Mario; Holan, George
PATENT ASSIGNEE(S): Commonwealth Scientific and Industrial Research Organization, Australia
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9412192	A1	19940609	WO 1993-AU606	1993 1129

W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AU 9455545	A1	19940622	AU 1994-55545	1993 1129
CN 1093906	A	19941026	CN 1993-121712	1993 1201

PRIORITY APPLN. INFO.:

APPLICATION NO.		DATE
AU 1992-6115	A	1992 1201
WO 1993-AU606	W	1993 1129

AB Heteropolytungstates having antiflaviviral activity has the general formula (I) to (VII): (I) An[XW12O40] wherein X is selected from PV, SiIV, GeIV, CoII, CoIII, ZnII,CuII, BIII, HI, AlIII, FeIII, VV, GaIII, MnIV, CIV; (II) An[X2W18O62] wherein X is PV; (III) An[XW11O39] wherein X is selected from PV, SiIV, GeIV, BIII, AlIII, GaIII, FeIII, CoIII; (IV) An[XW9O34] wherein X is selected from PV, SiIV, GeIV; (V) An[X2W17-mMmO61] wherein X is PV, M is MoVI, and m is 0, 1, 2, 4, or 5; (VI) An[X2W15-mMmO56]

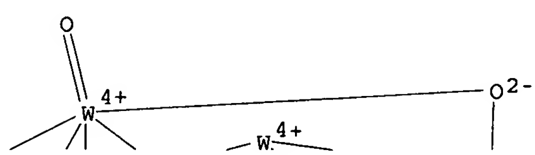
wherein X is PV, M is VV or MoVI, and m is 0 or 1; (VII) An[XM2W9O39] wherein X is P, and M is Zr; and wherein in each of the general formula (I) to (VII), A is a cation, and n is the number of cations necessary for elec. neutrality of the mol.; or dimers, hydrates of pharmaceutically acceptable derivs. thereof. Pharmaceutical **compns.** and methods for the treatment or prophylaxis of a flaviviral-associated infection which involve the use of these compds. are also disclosed. For example, 23 compds. including H3PW1240·nH2O were tested for their ability to inhibit RNA synthesis in an in vitro polymerase assay.

IT **12266-04-5 12357-89-0 12501-23-4**
56127-18-5 86692-07-1 133515-28-3
134879-28-0 157208-01-0
RL: BIOL (Biological study)
(flavivirus-associated infections treatment with)

RN 12266-04-5 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trisodium, hydrate (9CI) (CA INDEX NAME)

PAGE 1-A



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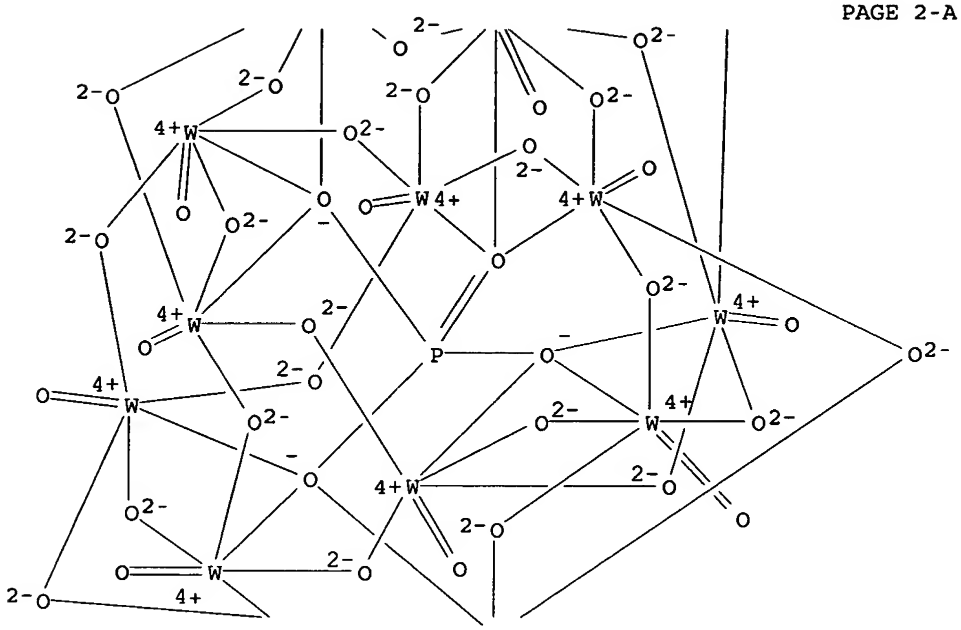

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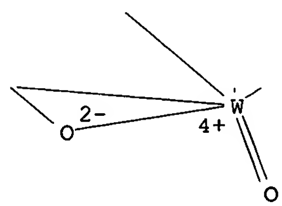


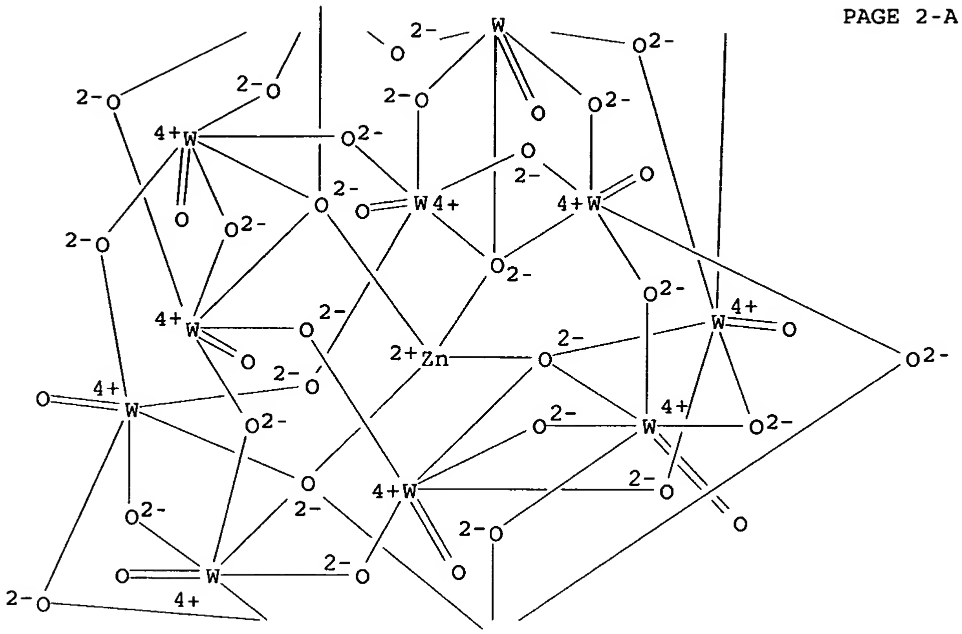
●3 Na^+

●x H_2O

RN 12357-89-0 HCAPLUS
CN Tungstate(6-), tetracosa-μ-oxotetra-μ4-oxododecaoxozincatedodeca-, hexapotassium, hydrate (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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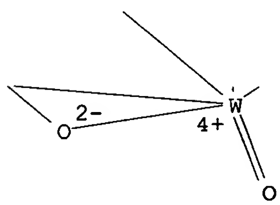
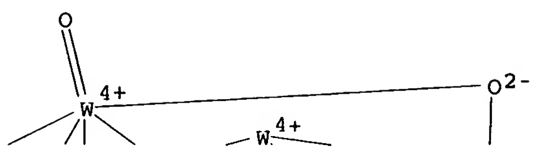


●6 K^+

●x H_2O

RN 12501-23-4 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca-, trihydrogen,
hydrate (9CI) (CA INDEX NAME)

PAGE 1-A



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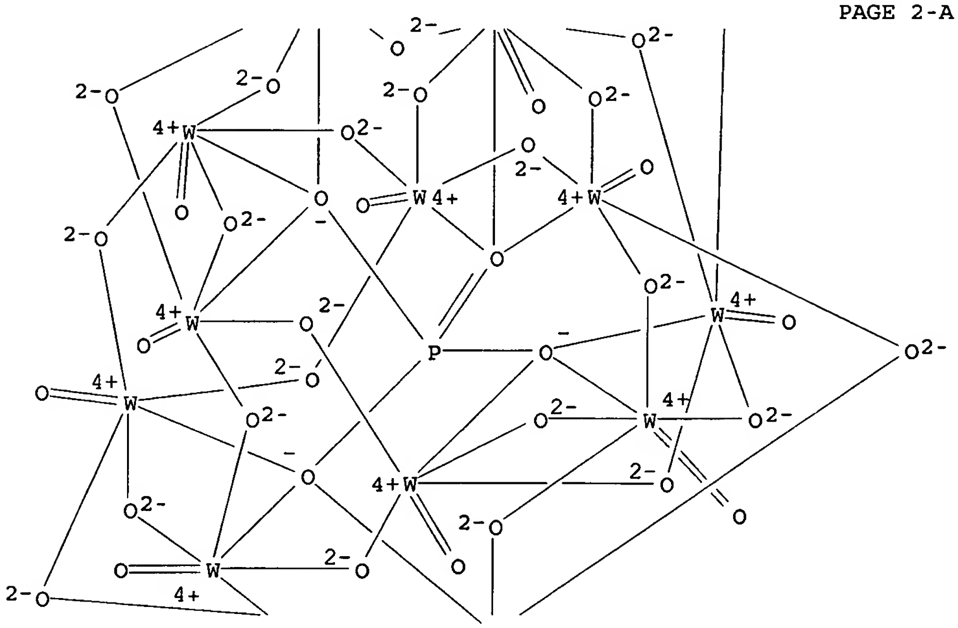

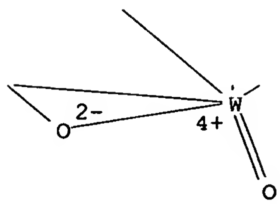

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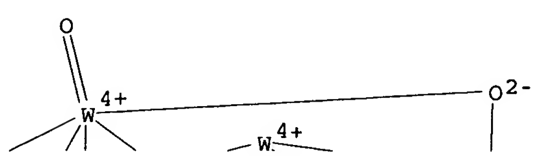
● 3 H^+

● x H_2O

RN 56127-18-5 HCAPLUS

CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]dodeca-, pentapotassium, hydrate (9CI) (CA INDEX NAME)

PAGE 1-A



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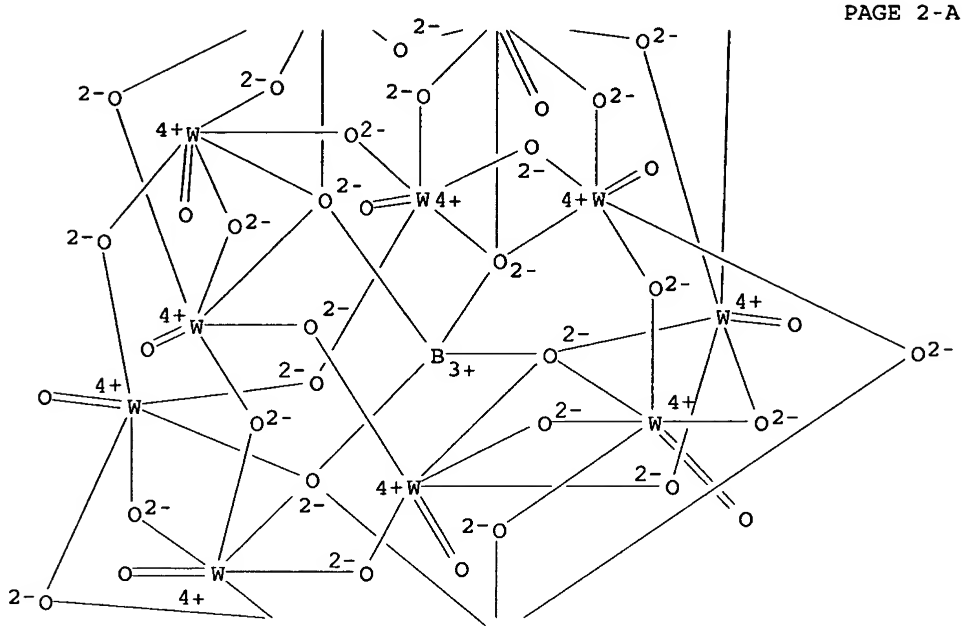

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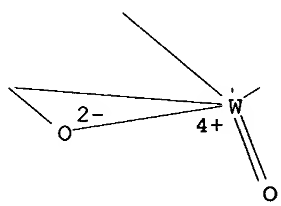


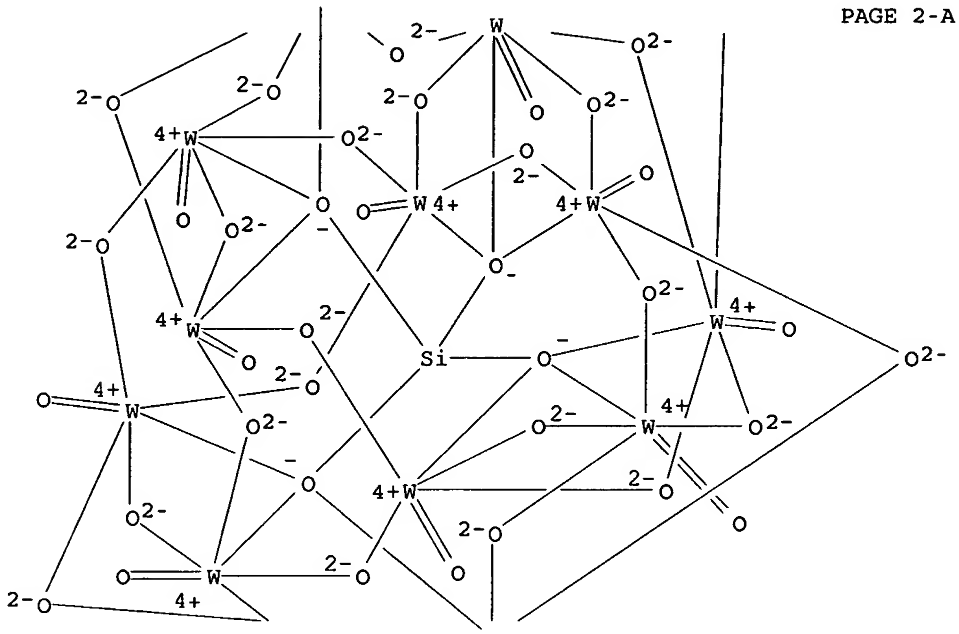
●5 K^+

●x H_2O

RN 86692-07-1 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrasodium, hydrate (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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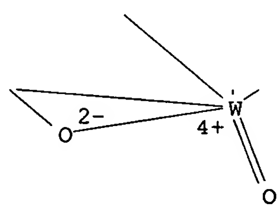

●4 Na^+

●x H_2O

RN 133515-28-3 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen, hydrate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 134879-28-0 HCAPLUS
CN Tungstate(6-), cobaltatetetracosa-μ-oxotetra-μ4-oxododecaoxododeca-, hexapotassium, hydrate (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

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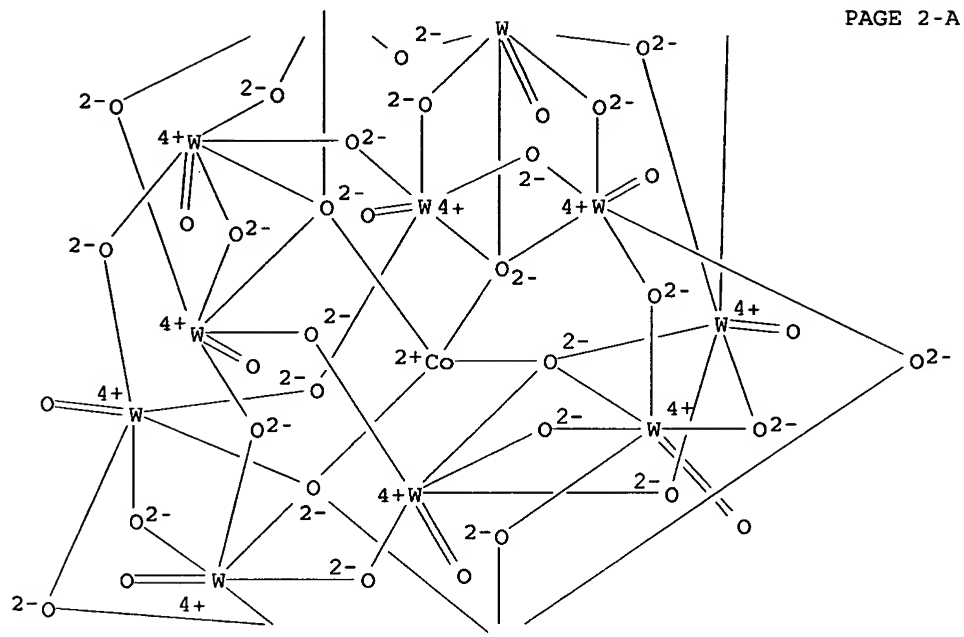
PAGE 2-A



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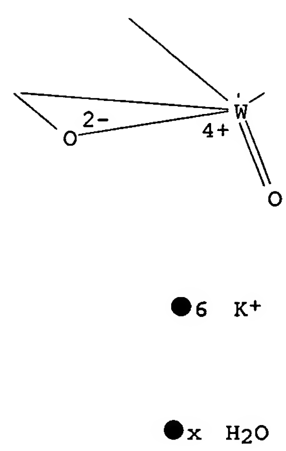

RN 157208-01-0 HCAPLUS
CN Vanadate(3-), tetra-μ4-oxo(tetracosa-μ-oxododecaoxododecatungstate)-, trihydrogen, compd. with N,N-dimethylmethanamine (1:3), hydrate (9CI) (CA INDEX NAME)

CM 1

CRN 157208-00-9
CMF H . 1/3 O40 V W12
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

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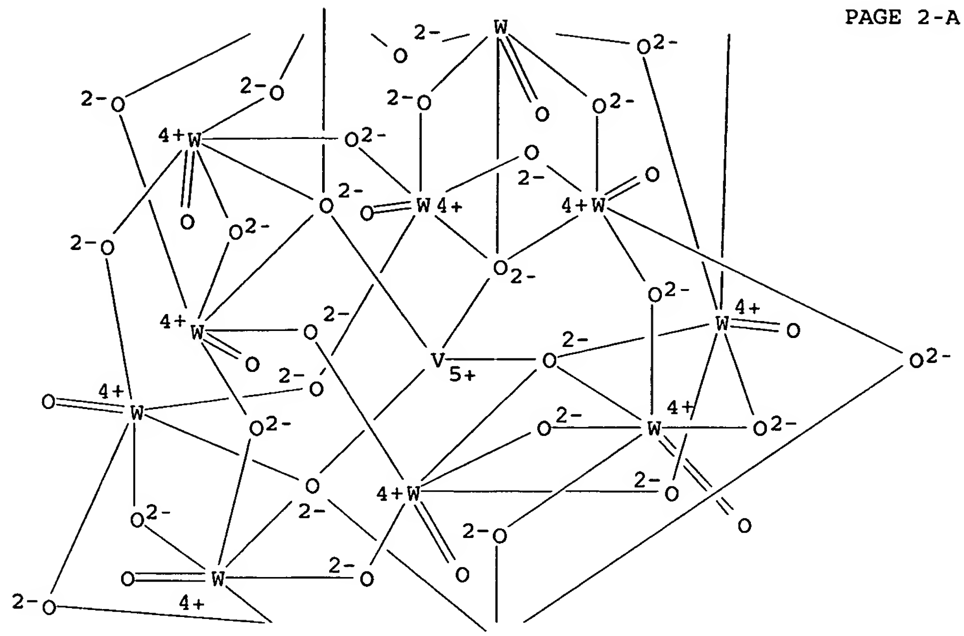

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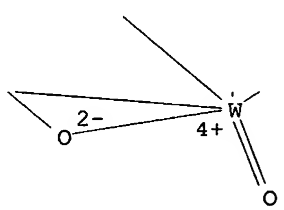

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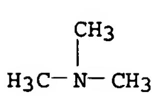
● 3 H^+

CM 2

CRN 75-50-3
CMF C3 H9 N



IC ICM A61K033-24
ICS C01G041-00
CC 1-5 (**Pharmacology**)
IT **12266-04-5** **12357-89-0** **12501-23-4**
56127-18-5 58916-01-1 62682-77-3 **86692-07-1**
113471-17-3 114714-81-7 116231-28-8 121796-02-9
133515-28-3 **134879-28-0** 136171-80-7
157079-66-8 157111-20-1 157111-21-2 157111-22-3

157111-23-4 157111-24-5 157177-66-7 **157208-01-0**
RL: BIOL (Biological study)
(flavivirus-associated infections treatment with)

L114 ANSWER 50 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:226955 HCAPLUS
DOCUMENT NUMBER: 120:226955
TITLE: Pharmaceutical **compositions** containing heteropolytungstates for the treatment of flavivirus infections
INVENTOR(S): Weigold, Helmut; Bartholomeusz, Angeline Ingrid; Holan, George; Marcuccio, Sebastian Mario; Wright, Peter James
PATENT ASSIGNEE(S): Commonwealth Scientific and Industrial Research Organization, Australia
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

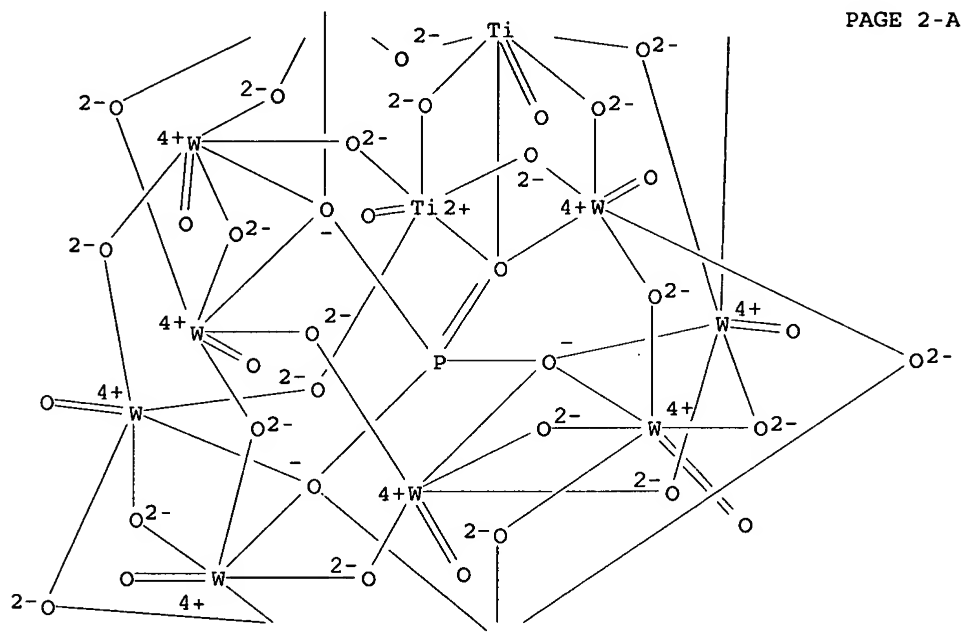
PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9321934	A1	19931111	WO 1993-AU192		1993 0430
W: AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, KZ, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA, US, VN					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
AU 9342555	A1	19931129	AU 1993-42555		1993 0430
HU 71677	A2	19960129	HU 1994-3128		1993 0430
CN 1082892	A	19940302	CN 1993-106560		1993 0501
PRIORITY APPLN. INFO.:			AU 1992-2213	A	1992 0501
			WO 1993-AU192	A	1993 0430

AB Pharmaceutical **compns.** containing heteropolytungstates and derivs. thereof are used for the treatment or prophylaxis of flavivirus infections, e.g. yellow fever. The inhibitory concentration of K4[C5H5TiPW11O39].nH2O (I) against kunjin virus-infected vero cells was at 5-100μM. A tablet contained I 250, lactose 210, povidone 15, Na starch glycollate 20, and Mg stearate 5mg.
IT **84303-06-0P 93222-18-5P 101144-77-8P**
105785-76-0P 152313-54-7P 152313-55-8P
152313-57-0P 152313-58-1P 152313-59-2P
152344-57-5P 152344-58-6P 152344-59-7P
152981-11-8P 154165-09-0P 154165-10-3P
154165-11-4P 154165-13-6P 154165-14-7P
RL: PREP (Preparation)
(preparation of, pharmaceutical **compns.** containing, for treatment of flavivirus infections)
RN 84303-06-0 HCAPLUS

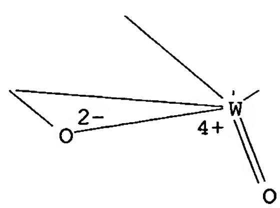
CN Titanate(7-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, heptapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A

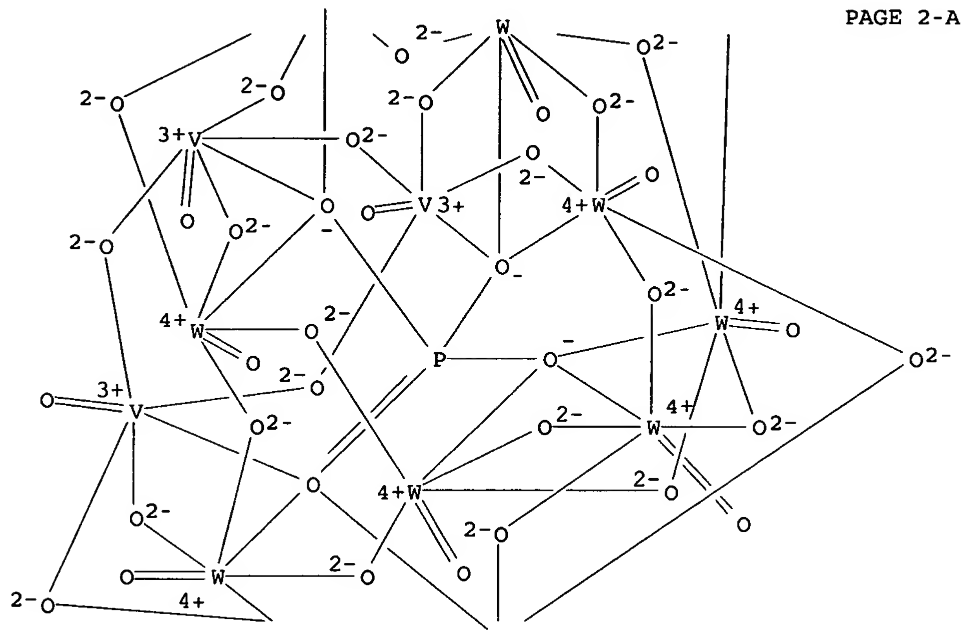


●7 K^+

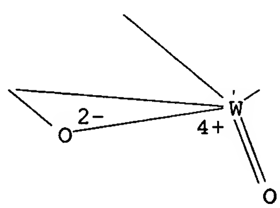
RN 93222-18-5 HCAPLUS
CN Vanadate(6-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tri-, hexacesium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●6 Cs^+

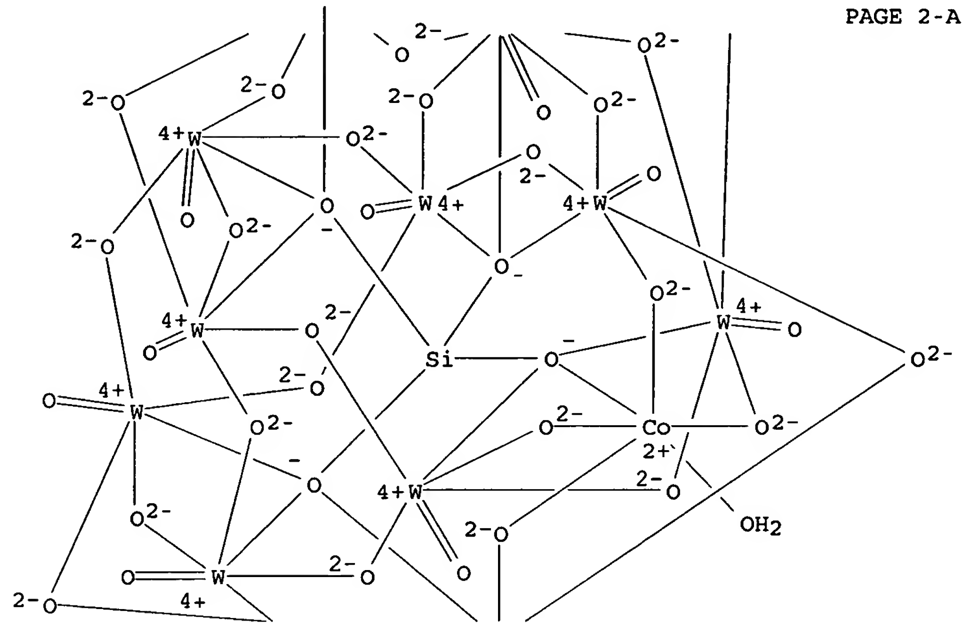
RN 101144-77-8 HCAPLUS
CN Vanadate(9-), [heptacosa-μ-oxopentadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'',κO'':κO''':κO''']]pentadecatungstate]nona-μ-oxotrioxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]tri-, octapotassium hydrogen (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

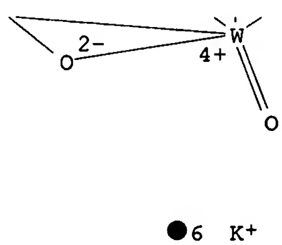
RN 105785-76-0 HCAPLUS
CN Tungstate(6-), (aquacobaltate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxoundecaoxoundeca-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



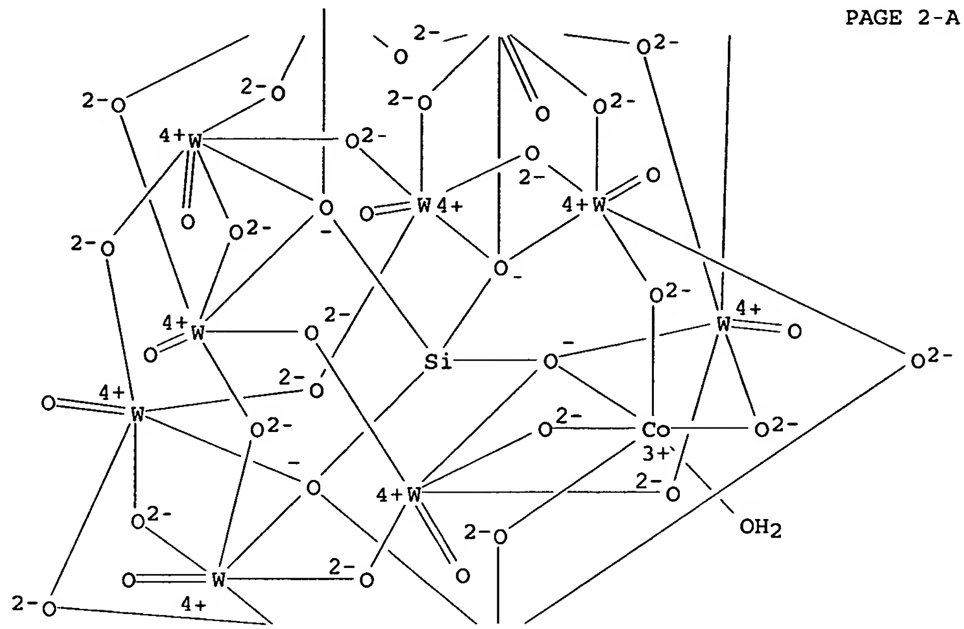
RN 152313-54-7 HCAPLUS
CN Tungstate(5-), (aquacobaltate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxoundecaoxoundeca-, pentahydrogen, compd. with guanidine (1:5) (9CI) (CA INDEX NAME)

CM 1

CRN 66304-66-3
CMF Co H2 O40 Si W11 . 5 H
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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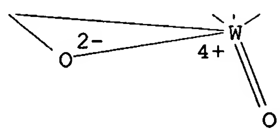
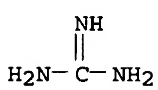


● 5 H^+

CM 2

CRN 113-00-8
CMF C H5 N3



RN 152313-55-8 HCAPLUS
CN Zirconate(8-), (heptadeca-μ-oxodecaoxodecatungstate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]hepta-μ-oxodioxodi-, tripotassium pentahydrogen (9CI) (CA INDEX NAME)

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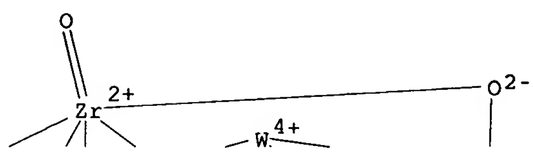

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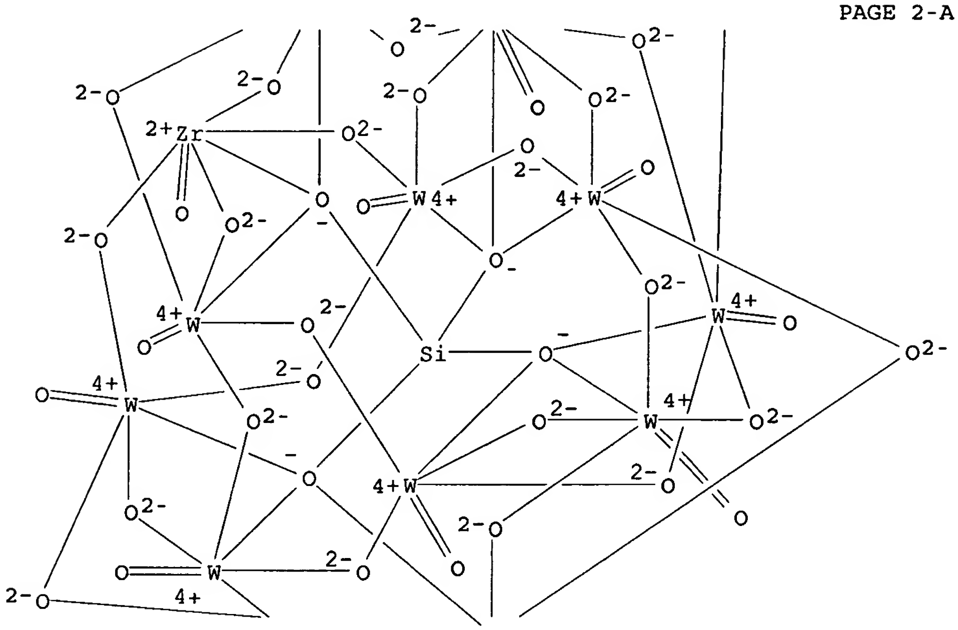

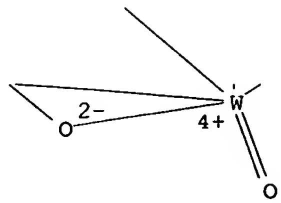

PAGE 3-A

●5 H^+

●3 K^+

RN 152313-57-0 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, hydrogen [μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)trizirconate(10-) (3:7:1) (9CI) (CA INDEX NAME)

CM 1

CRN 152313-56-9
CMF O40 Si W9 Zr3
CCI CCS

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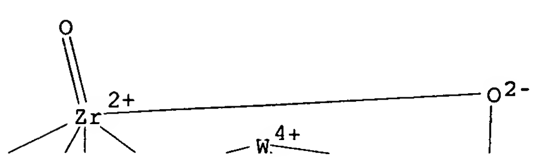
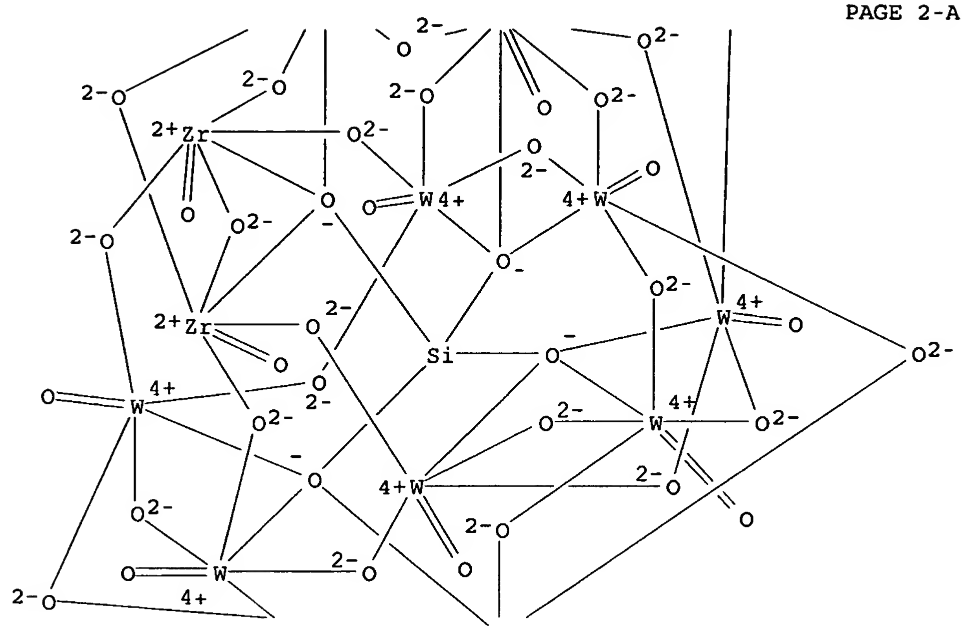
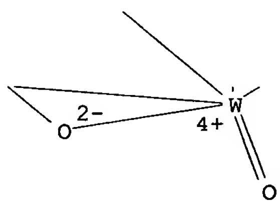


PAGE 2-A

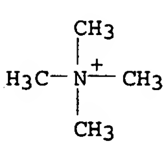


PAGE 3-A



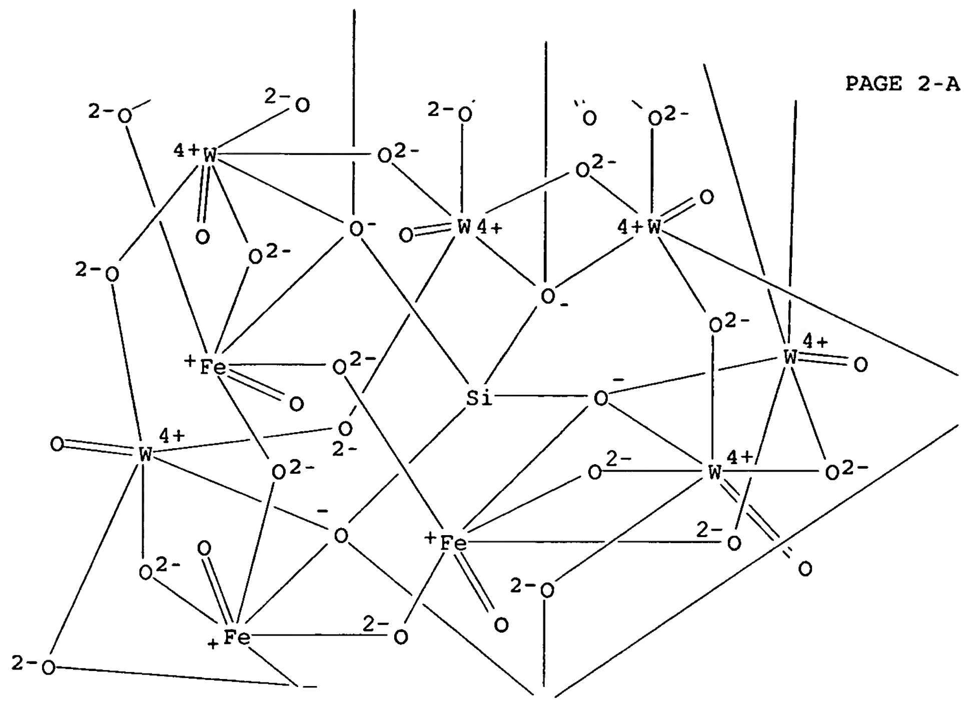
CM 2

CRN 51-92-3
CMF C4 H12 N

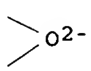


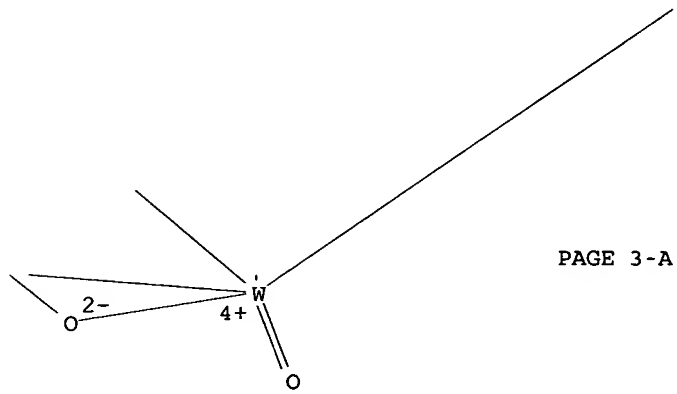
RN 152313-58-1 HCAPLUS
CN Tungstate(13-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]henei
cosa-μ-oxononaoxo(tri-μ-oxotrioxotriferrate)nona-,
hexapotassium heptahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT



PAGE 2-B





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●7 H^+

●6 K^+

RN 152313-59-2 HCAPLUS
CN Vanadate(7-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, hexapotassium hydrogen (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 152344-57-5 HCAPLUS
CN Tungstate(6-), tetracosa-μ-oxoundecaoxo(oxoferrate)[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]undeca-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

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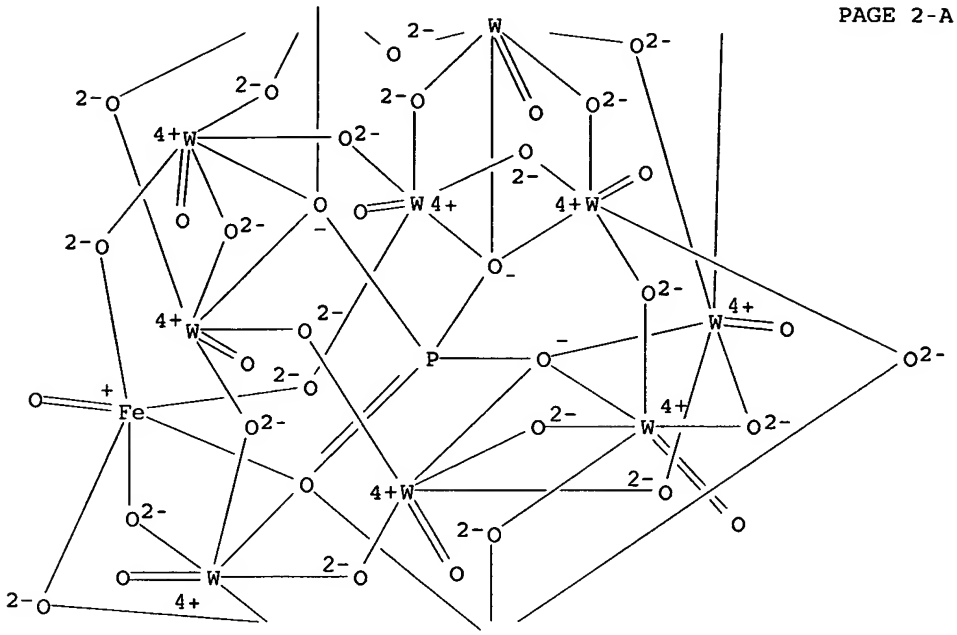
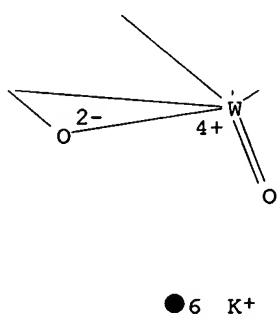


PAGE 3-A



RN 152344-58-6 HCAPLUS
CN Zirconate(7-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]di-, heptapotassium (9CI) (CA INDEX NAME)

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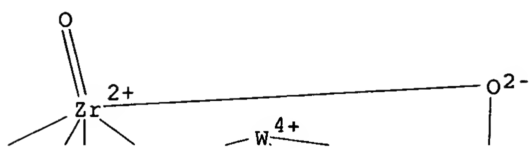
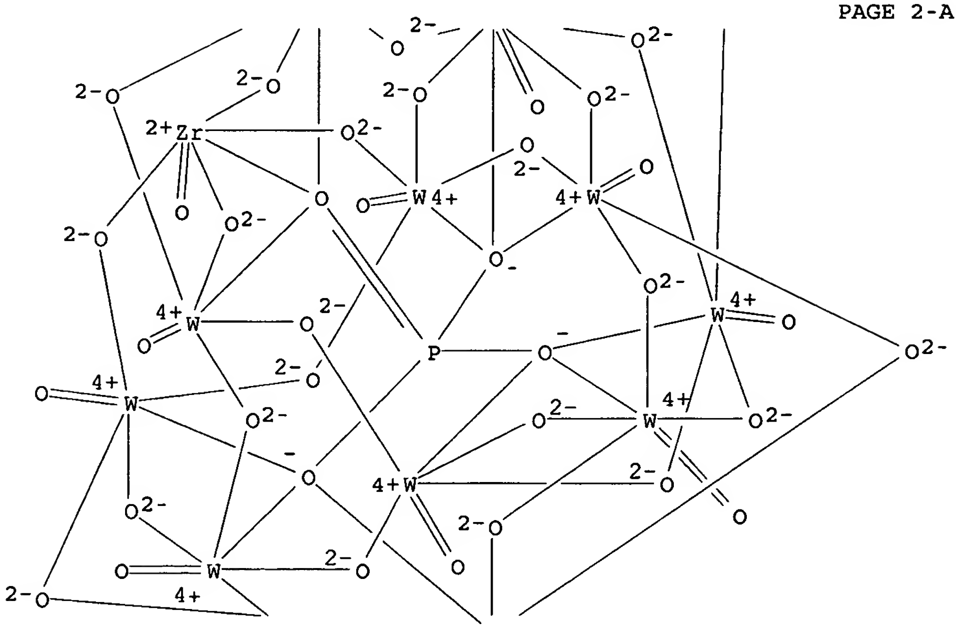
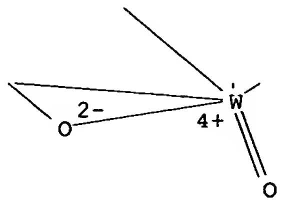


PAGE 2-A



PAGE 3-A



●7 K+

RN 152344-59-7 HCAPLUS

CN Zirconate(7-), (heptadeca-μ-oxodecaoxodecatungstate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, hexapotassium hydrogen (9CI) (CA INDEX NAME)

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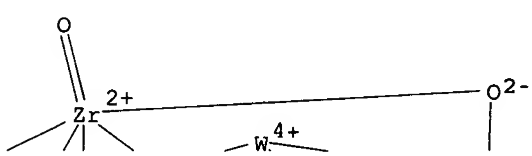

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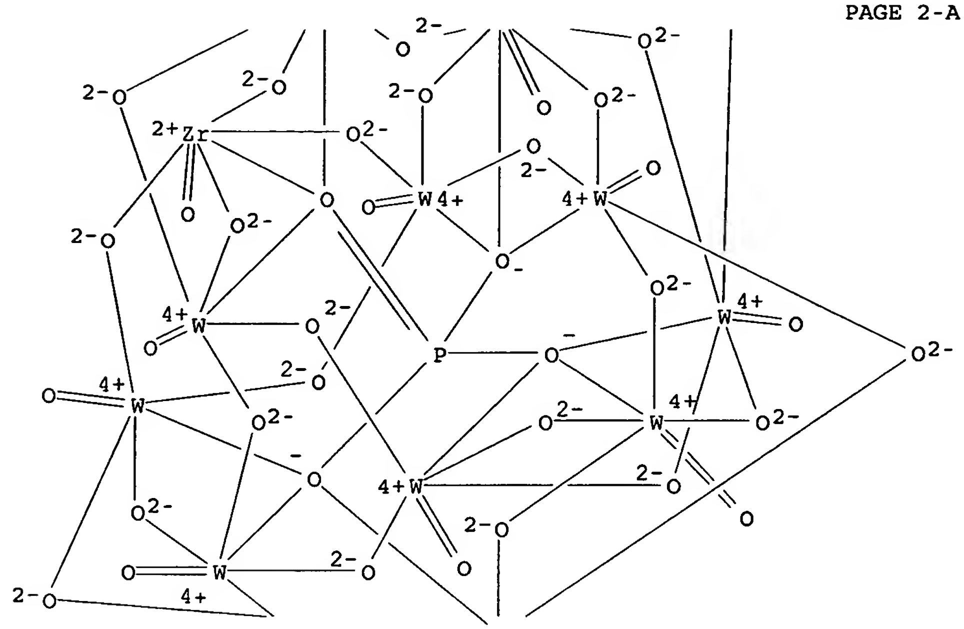

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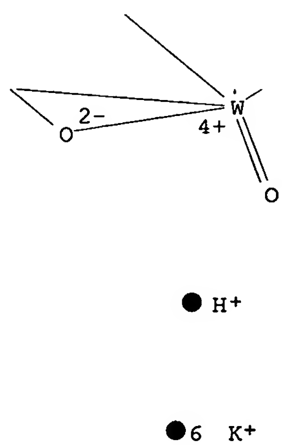
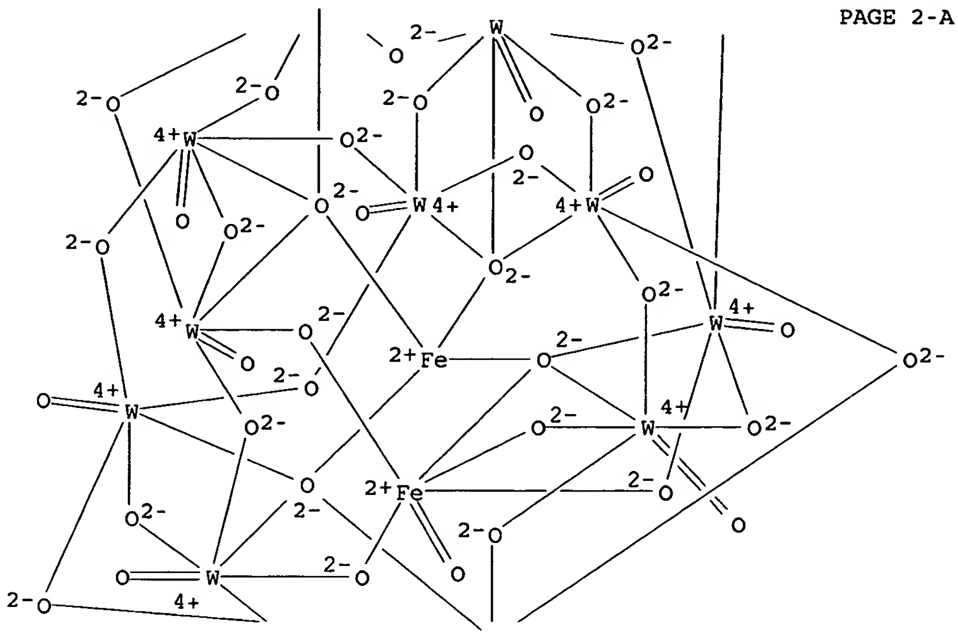
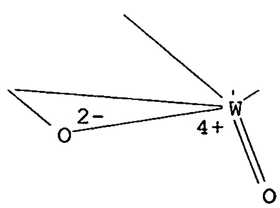


RN 152981-11-8 HCAPLUS
CN Tungstate(8-), tetracosa-μ-oxotetra-μ4-oxoundecaoxo(oxodiferrate)undeca-, octapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



PAGE 2-A



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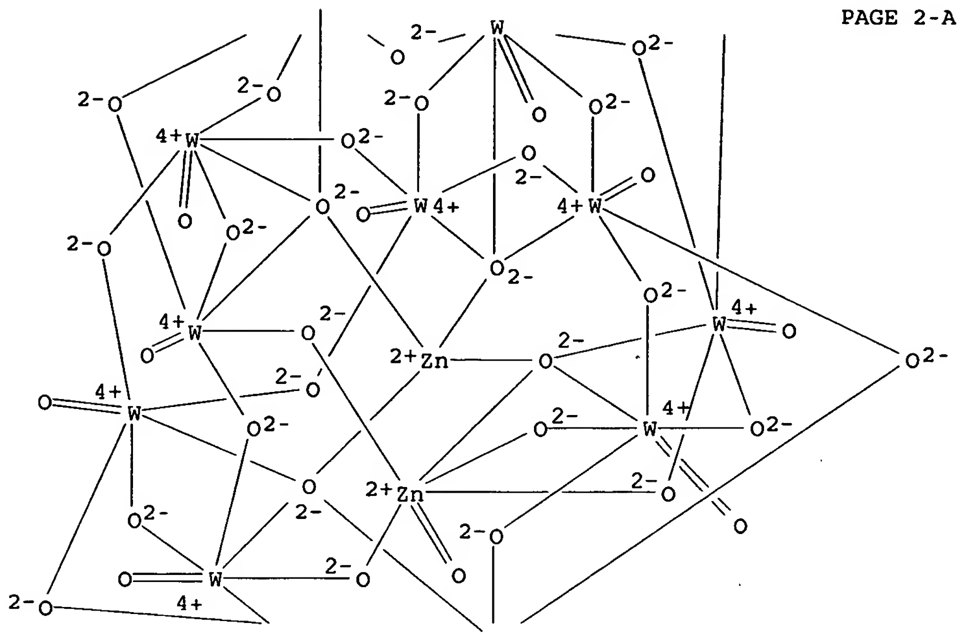
●8 K^+

RN 154165-09-0 HCAPLUS

CN Tungstate(8-), tetracosa-μ-oxotetra-μ4-oxoundecaoxo(oxodizincate)undeca-, octapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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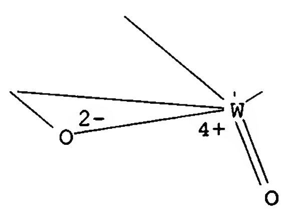
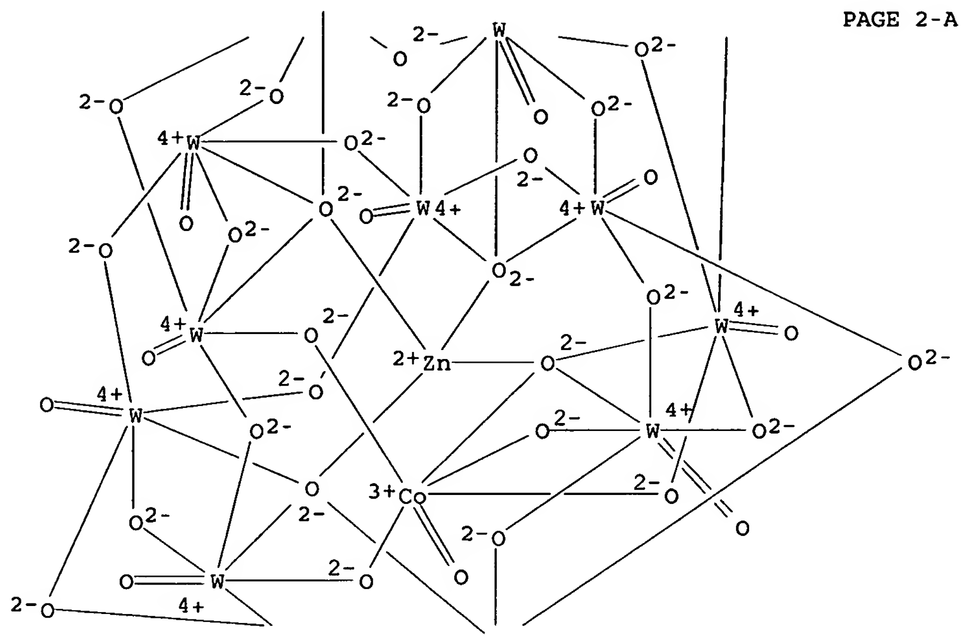


●8 K^+

RN 154165-10-3 HCAPLUS
CN Tungstate(7-), tetracosa-μ-oxotetra-μ4-oxoundecaoxo(oxocobaltate)zincateundeca-, heptapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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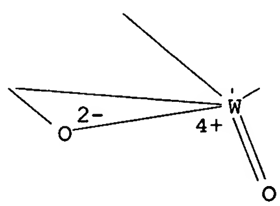

●7 K^+

RN 154165-11-4 HCAPLUS
CN Tungstate(14-), (di-μ-oxo-μ4-oxotrioxotetraferrate)docosa-μ-oxotri-μ4-oxononaoxonona-, hexapotassium octahydrogen (9CI) (CA INDEX NAME)

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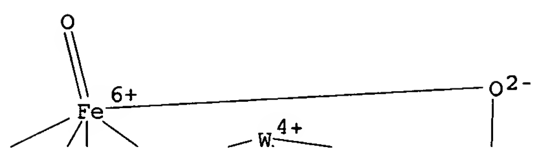

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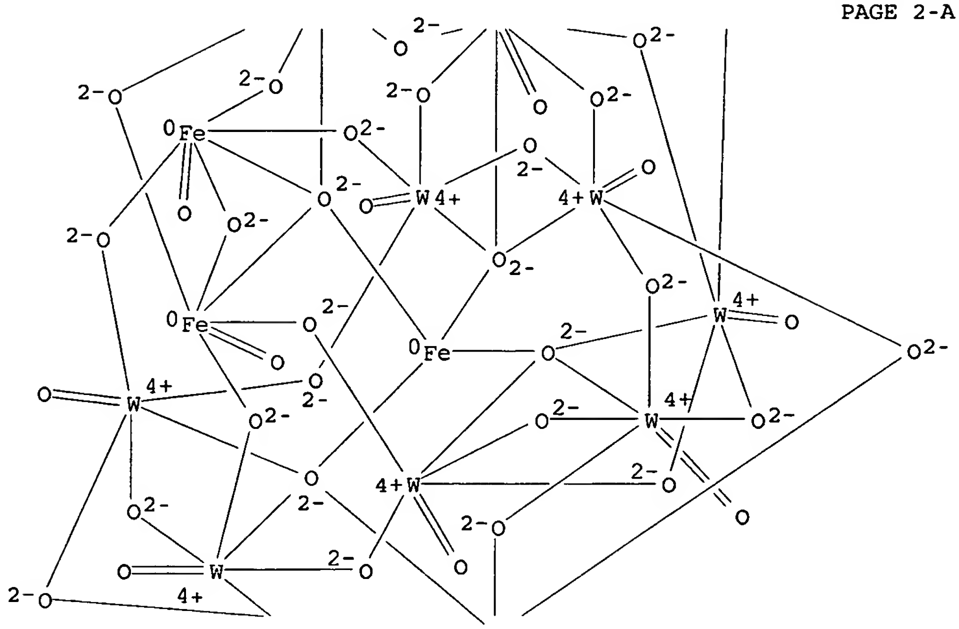

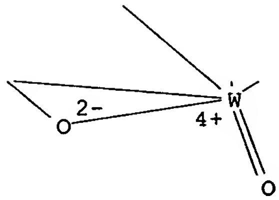

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● 8 H^+

● 6 K^+

RN 154165-13-6 HCAPLUS
CN Zirconate(9-), nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tri-, nonahydrogen, compd. with N,N-dimethylmethanamine (1:3) (9CI) (CA INDEX NAME)

CM 1

CRN 154165-12-5
CMF H . 1/9 O40 P W9 Zr3
CCI CCS

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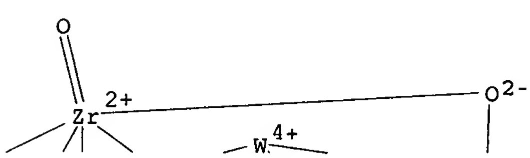
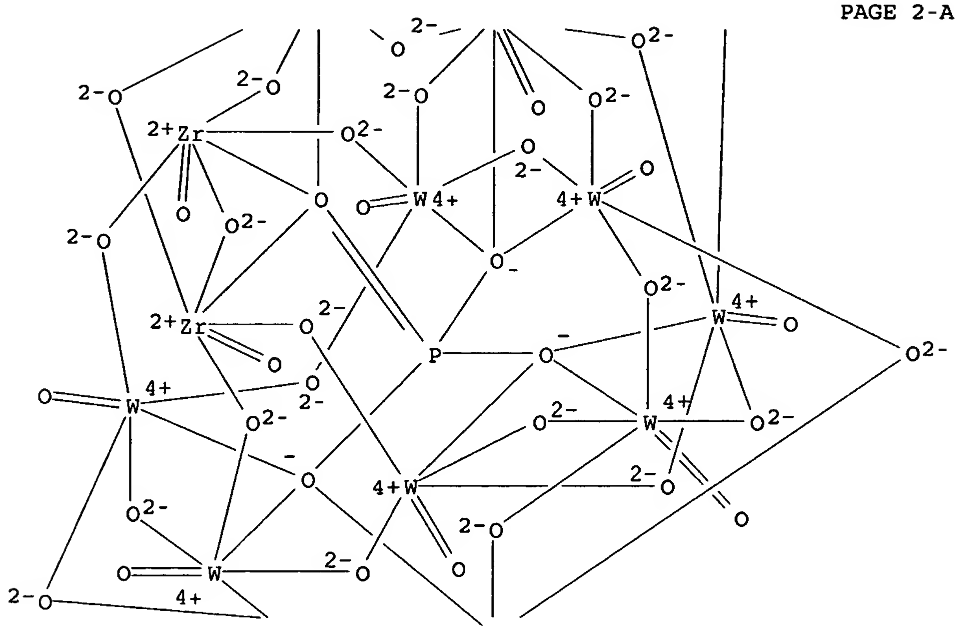


PAGE 2-A



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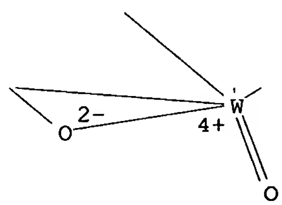
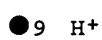
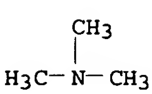




CM 2

CRN 75-50-3
CMF C3 H9 N



RN 154165-14-7 HCAPLUS
CN Titanate(10-), [μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, hexapotassium tetrahydrogen (9CI) (CA INDEX NAME)

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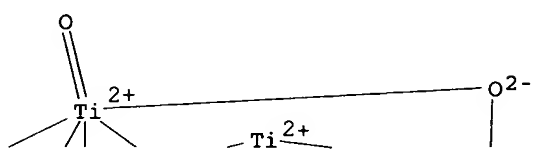

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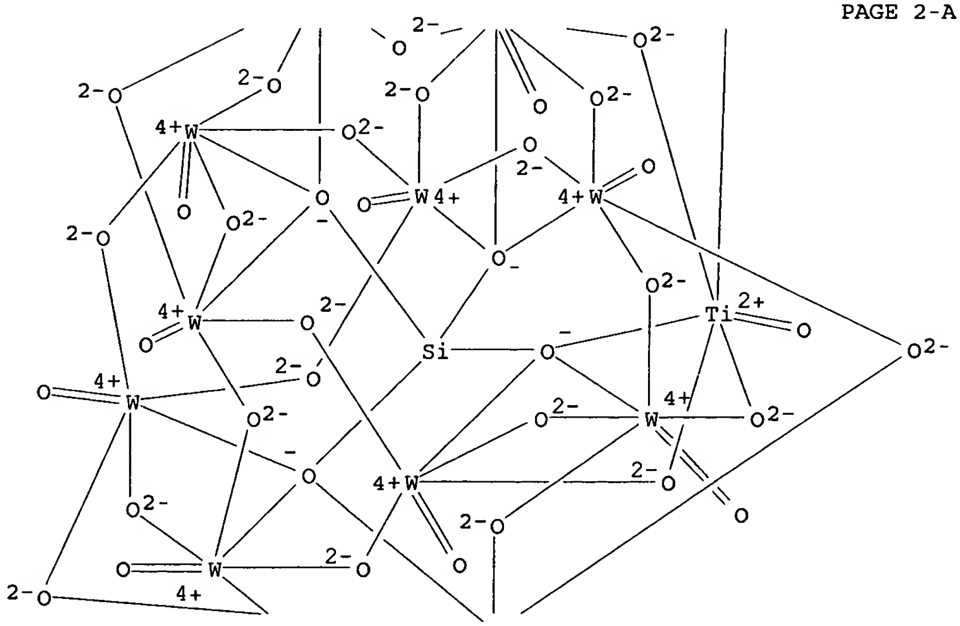

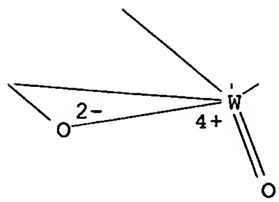

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●4 H+

●6 K+

IC ICM A61K033-24
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): **1**, 78
ST heteropolytungstate flavivirus infection pharmaceutical **compn**; tablet heteropolytungstate kunjin virus infection; yellow fever treatment heteropolytungstate tablet
IT Virus, animal
(flavi-, infection with, treatment of, with pharmaceutical **compns.** containing heteropolytungstates)
IT Heteropoly acids
RL: PREP (Preparation)
(tungstates, preparation of, pharmaceutical **compns.** containing, for treatment of flavivirus infections)
IT 63043-34-5P 63043-36-7P 81552-61-6P 81553-24-4P **84303-06-0P 93222-18-5P** 98735-23-0P **101144-77-8P** 101347-00-6P 101347-05-1P **105785-76-0P** 110717-64-1P 110717-65-2P 110717-70-9P 133289-60-8P, Iron sodium tungsten zinc oxide (Fe2Na12W19Zn3O69) 139901-87-4P, Iron sodium tungsten oxide phosphate (Fe2Na7W9O32(PO4)) 139901-88-5P, Iron potassium tungsten oxide phosphate (Fe2K7W9O32(PO4)) 140186-99-8P 141532-38-9P 141532-43-6P 141532-46-9P 141532-49-2P 141532-61-8P 141532-65-2P 141532-70-9P 141532-71-0P 147230-49-7P 152270-86-5P, Cobalt sodium tungsten oxide (Co5Na12W19O68) 152270-87-6P **152313-54-7P 152313-55-8P 152313-57-0P 152313-58-1P 152313-59-2P 152344-57-5P 152344-58-6P 152344-59-7P** 152369-85-2P 152369-86-3P 152369-87-4P 152444-38-7P 152444-39-8P 152444-40-1P 152444-41-2P **152981-11-8P** 152992-15-9P, Ammonium iron tungsten oxide phosphate ((NH4)7Fe2W9O32(PO4)) **154165-09-0P 154165-10-3P 154165-11-4P 154165-13-6P 154165-14-7P** 188746-62-5P, Sodium tungsten zinc oxide (Na12W19Zn5O68)
RL: PREP (Preparation)
(preparation of, pharmaceutical **compns.** containing, for treatment of flavivirus infections)

L114 ANSWER 51 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:93692 HCAPLUS
DOCUMENT NUMBER: 118:93692
TITLE: Coated-wire electrodes sensitive to a local anesthetic bupivacaine cation and in vivo applications
AUTHOR(S): Sakate, Hiromu; Wakatsuki, Miho; Kaneshina, Shoji; Yokono, Atsuko; Yokono, Satoshi; Oguli, Kenji

CORPORATE SOURCE: Inst. Coop. Res., Univ. Tokushima, Tokushima, 770, Japan
SOURCE: Bunseki Kagaku (1992), 41(11), 573-80
CODEN: BNSKAK; ISSN: 0525-1931
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

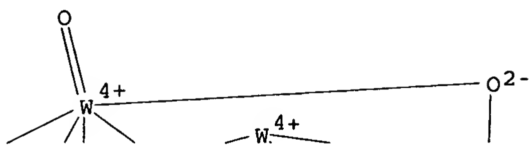
AB A coated-wire electrode sensitive to the local anesthetic bupivacaine cation was prepared by coating copper wire (0.6 or 0.2 mm diameter) with a polyvinylchloride (PVC) membrane of 0.3-0.6 mm thickness. The PVC membrane included a plasticizer and an ion exchanger forming an ion-pair with bupivacaine. Five ion exchangers and 3 plasticizers were used for the electrode membrane. The response times and the slopes of the electromotive force vs. bupivacaine concentration curves were examined by electrodes with various membrane **compns.** The best results were obtained with the electrode with a PVC membrane **composition** as follows: (1) ion-exchangers sodium tetrakis[3,5-bis(trifluoromethyl)phenyl]bora te (1-5 mg) or dodecatungstophosphoric acid (2-5 mg) or ion-pair bupivacaine-dodecatungstophosphate (2 mg); (2) plasticizers dioctyladipate (100 mg), dioctylsebacate (100 mg), or dioctylphthalate (150 mg); (3) PVC (100 mg); and (4) solvent THF (1.5 mL). The electrodes showed linear responses with Nernstian slopes (58-63 mV/decade) over a concentration range of 3 + 10-5-10-2 M. In measurements with the electrode incorporating dodecatungstophosphoric acid or its ion-pair with bupivacaine used as the sensing material, the change in the pH within a range of 2-8 did not affect the electrode potential at 10-4 M bupivacaine. None of the inorg. and organic cations in biol. samples interfered, as judged by the very small values of the selectivity coeffs. The selectivity coeffs. of the bupivacaine electrode toward other local anesthetics decreased in the order of dibucaine > tetracaine > mepivacaine = lidocaine = procaine. A bupivacaine electrode with the PVC membrane, in which bupivacaine-dodecatungstophosphate ion-pair and dioctylphthalate were incorporated, was applied to monitor bupivacaine concns. in the arterial blood of rabbits. The electrode is suitable for measurements of bupivacaine concns. in vivo.

IT **1343-93-7 146090-83-7**
RL: ANST (Analytical study)
(in electrode selective for bupivacaine determination in blood)

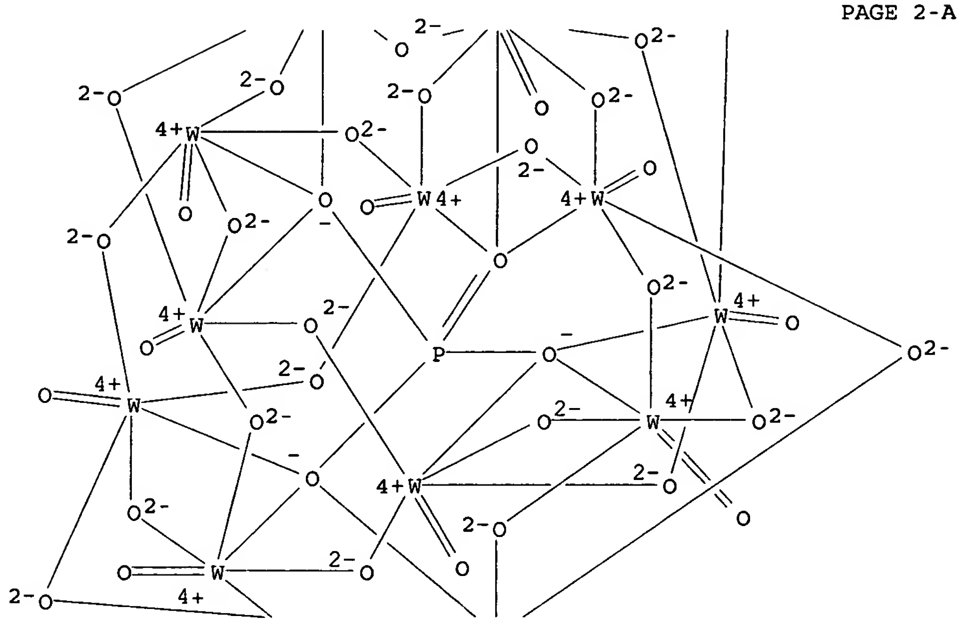
RN 1343-93-7 HCAPLUS

CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

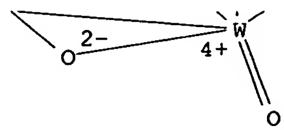
PAGE 1-A



PAGE 2-A



PAGE 3-A

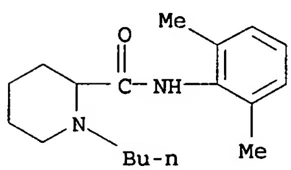


●3 H+

RN 146090-83-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca-, trihydrogen, compd. with 1-butyl-N-(2,6-dimethylphenyl)-2-piperidinecarboxamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 38396-39-3
CMF C18 H28 N2 O



CM 2

CRN 1343-93-7
CMF H . 1/3 O40 P W12
CCI CCS

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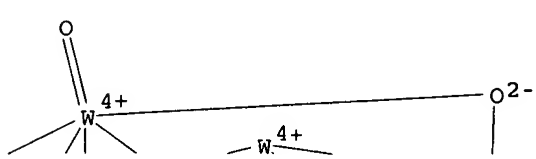

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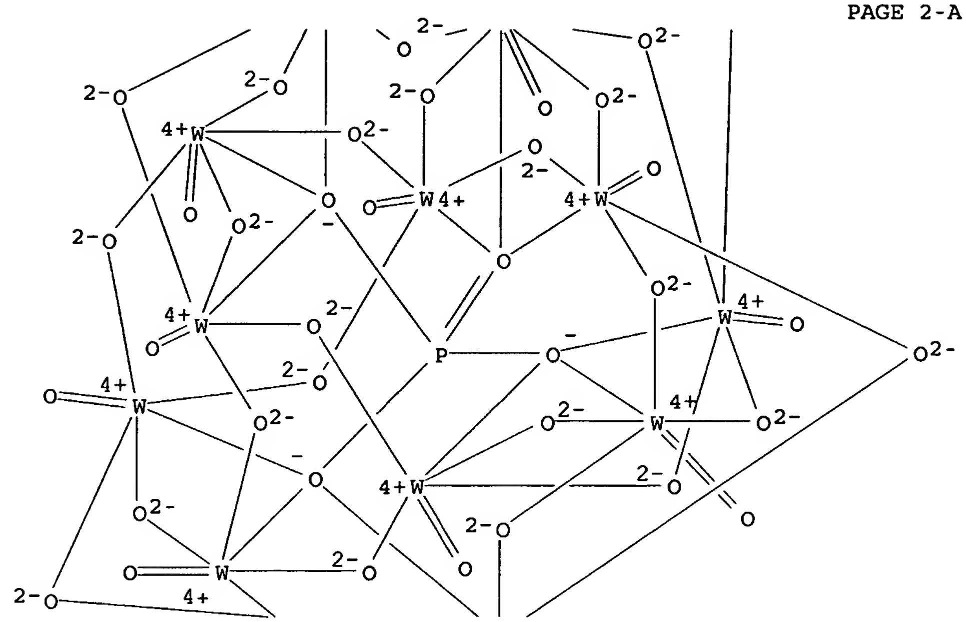

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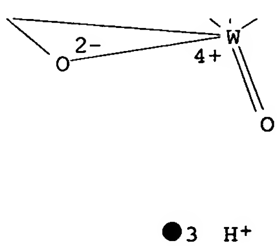

CC 1-1 (**Pharmacology**)
Section cross-reference(s): 72
IT 103-23-1, Dioctyl adipate 117-81-7, Dioctyl phthalate
122-62-3, Dioctyl sebacate **1343-93-7** 9002-86-2,
Polyvinylchloride 79060-88-1, Sodium tetrakis[3,5-
bis(trifluoromethyl)phenylborate **146090-83-7**
RL: ANST (Analytical study)
(in electrode selective for bupivacaine determination in blood)

L114 ANSWER 52 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:638711 HCAPLUS
DOCUMENT NUMBER: 117:238711
TITLE: Kandite clay **compositions**, and their manufacture
INVENTOR(S): Vaughan, David Evan William
PATENT ASSIGNEE(S): Exxon Research and Engineering Co., USA
SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 491520	A1	19920624	EP 1991-311556		19911212
EP 491520	B1	19941026			
R: BE, DE, FR, GB, IT, NL					
CA 2055365	AA	19920618	CA 1991-2055365		19911113
BR 9105426	A	19920825	BR 1991-5426		19911213
JP 05139719	A2	19930608	JP 1991-331019		19911216
JP 05310414	A2	19931122	JP 1991-361046		19911217
US 5326734	A	19940705	US 1992-985399		19921204
PRIORITY APPLN. INFO.:			US 1990-628514	A	19901217
			US 1992-857032	B1	19920324

AB Pillared interlayered kandite **compns.** comprise kandite layers separated by inorg. metal or metal oxide pillars derived from charged or neutral oxide, hydroxide, or organometallic clusters containing ≥4 metal atoms. The interlayer distances are substantially greater than those in precursor of the same but nonsepd. clay. The kandite clay **compns.** are manufactured by (a) intimately **mixing** finely divided kandite clay with an aqueous solution to obtain a precursor suspension, (b) adding an effective amount of pillaring medium to the dispersion and aging the **mixture** for a sufficient time to allow infusion of the pillaring medium into the clay, (c) and heating the precursor at a temperature sufficient to decompose the added compound The pillared interlayered kandite **compns.** are suitable for use as catalysts, catalyst supports, sorbents, ion exchangers, extenders, fillers, and ceramic precursors.

IT **12026-57-2DP**, inclusion compds. with halloysite
RL: PREP (Preparation)
(manufacture of, for catalysts and sorbents and ceramic precursors)

RN 12026-57-2 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

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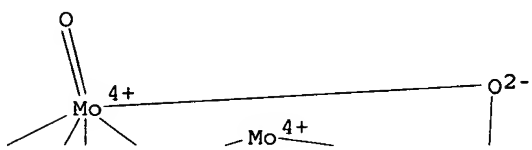
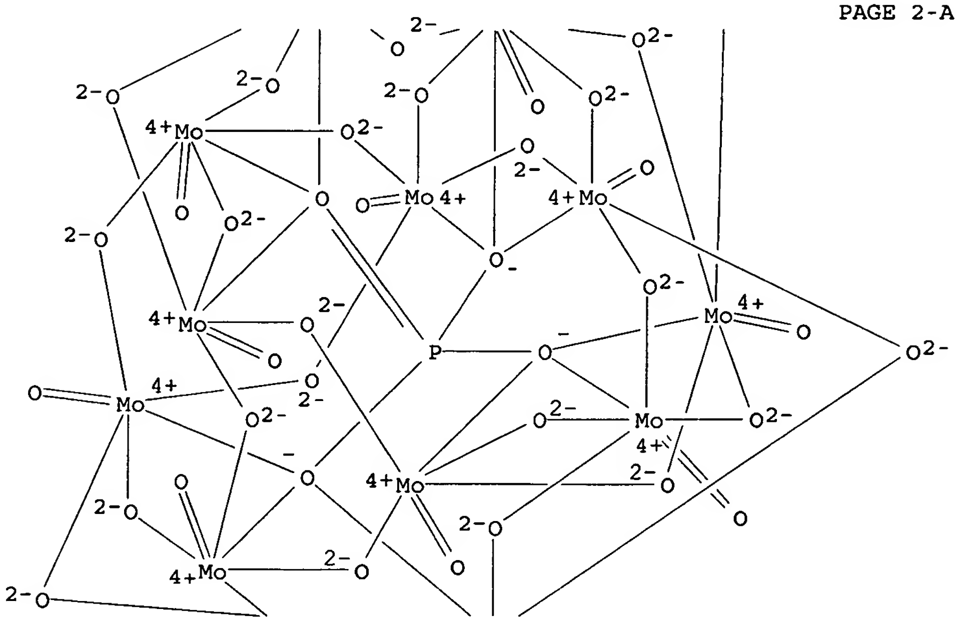


PAGE 2-A



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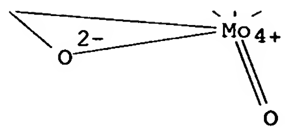

●3 H^+

IC ICM B01J029-02
CC 57-5 (Ceramics)
Section cross-reference(s): 67
IT Catalysts and Catalysis
Ceramic materials and **wares**
Cracking catalysts
Filling materials
Ion exchangers
Sorbents
(kandite for, pillared, intercalated, manufacture of)
IT 1327-41-9DP, inclusion compds. with halloysite
12026-57-2DP, inclusion compds. with halloysite
12198-10-6DP, Garnierite, inclusion compds. with zirconium oxychloride 12769-92-5DP, Zirconium chloride oxide, inclusion compds. with halloysite
RL: PREP (Preparation)
(manufacture of, for catalysts and sorbents and ceramic precursors)

L114 ANSWER 53 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:584843 HCAPLUS
DOCUMENT NUMBER: 117:184843
TITLE: Polyoxotungstate compounds with antiviral activity, especially against human immunodeficiency resin (HIV)
INVENTOR(S): Savage, Paul David; Theobald, Brian Ronald Charles
PATENT ASSIGNEE(S): Johnson Matthey PLC, UK
SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 442663	A1	19910821	EP 1991-300997	1991 0206
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CA 2035994	AA	19910816	CA 1991-2035994	1991 0208
AU 9170944	A1	19910822	AU 1991-70944	1991 0208
ZA 9101065	A	19911127	ZA 1991-1065	1991 0213
JP 04211016	A2	19920803	JP 1991-22308	1991 0215

PRIORITY APPLN. INFO.: GB 1990-3430 A 1990 0215

OTHER SOURCE(S): MARPAT 117:184843

AB Polyoxotungstate ions, having addnl. atoms selected from P, transition metals, and group 13 metals, and which have a metal cluster structure which is not the Keggin structure, form pharmaceutical **compns.** with antiviral, especially anti-HIV, activity. Examples of compds. of the invention include [P2HcW12Mx'Oy]P- (M' = transition metal; x = 0-6; y = 48-62; c = 0-2; p = integer dependent on oxidation state of M'). Preparation of a large number of compds. of the invention is described, and activity of the compds. of the invention against HIV-1 and -2 is included.

IT **85585-40-6**
RL: BIOL (Biological study)
(antiviral)
RN 85585-40-6 HCAPLUS
CN Vanadate(9-), [heptacosa-μ-oxopentadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]pentadecatungstate]nona-μ-oxotrioxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]tri- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **101144-77-8**
RL: BIOL (Biological study)
(antiviral activity against human immunodeficiency virus-1 and -2 of)
RN 101144-77-8 HCAPLUS
CN Vanadate(9-), [heptacosa-μ-oxopentadecaoxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'',κO'':κO''':κO''']]pentadecatungstate]nona-μ-oxotrioxo[μ9-[phosphato(3-)-κO:κO:κO:κO':κO':κO'':κO'':κO''':κO''']]tri-, octapotassium hydrogen (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **1343-93-7 12027-38-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in antiviral polyoxotungstate compound preparation)
RN 1343-93-7 HCAPLUS
CN Tungstate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

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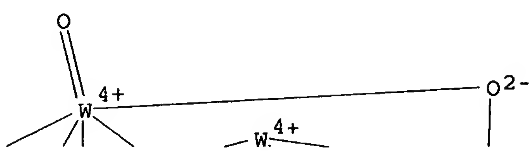

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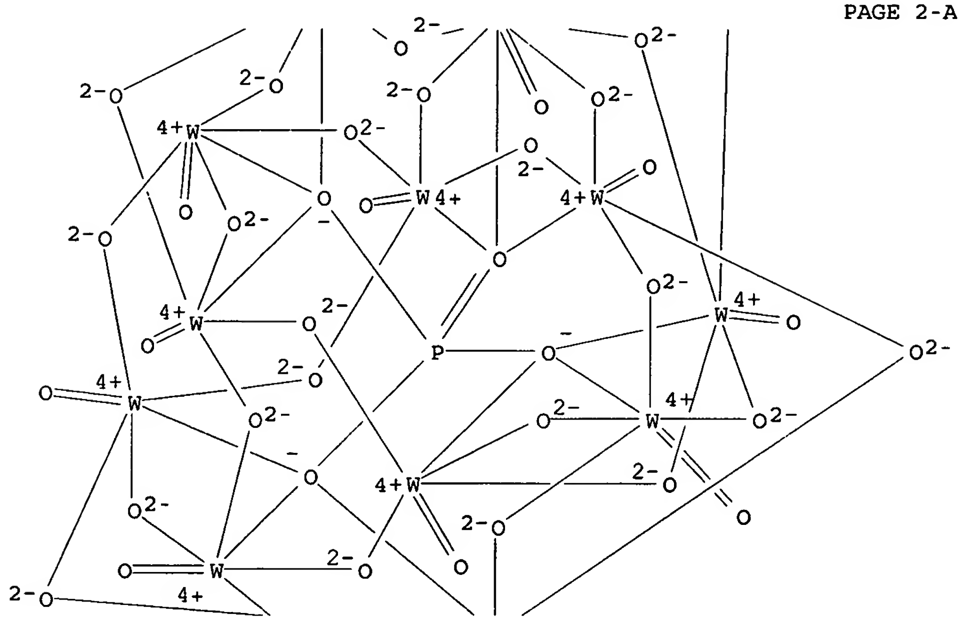

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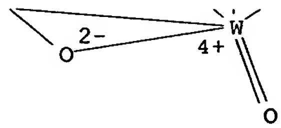

●3 H^+

RN 12027-38-2 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

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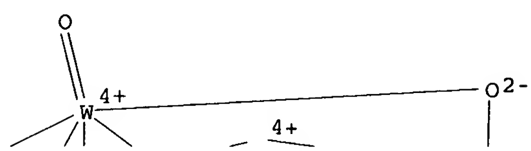

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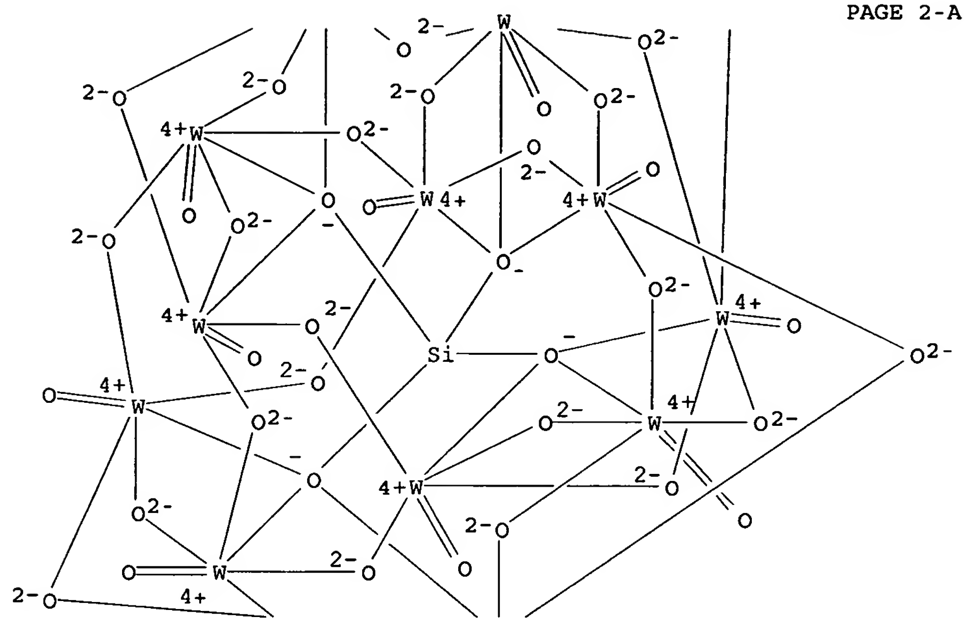

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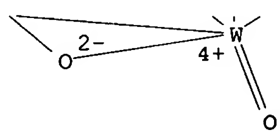


● 4 H^+

IC ICM A61K033-24
    ICS A61K033-42
CC 1-5 (**Pharmacology**)
    Section cross-reference(s): 78
IT **85585-40-6** 141216-02-6
    RL: BIOL (Biological study)
       (antiviral)
IT 63950-53-8 63950-56-1 65046-52-8 79104-95-3 79104-96-4
    89173-95-5 99397-47-4 **101144-77-8** 101347-05-1
    110294-54-7 110717-64-1 111933-31-4 139320-10-8, Cerium
    potassium tungsten oxide (CeK6W10O35) 139320-11-9, Gadolinium
    potassium tungsten oxide (GdK7W10O35) 139320-12-0, Erbium
    potassium tungsten oxide (ErK7W10O35) 139381-06-9 139919-86-1,
    Praseodymium sodium tungsten oxide (PrNa7W10O35)
    RL: BIOL (Biological study)
       (antiviral activity against human immunodeficiency virus-1 and
       -2 of)
IT 645-35-2 **1343-93-7** 7550-45-0, Titanium tetrachloride,
    reactions 7646-85-7, Zinc chloride (ZnCl2), reactions
    10098-89-2 10141-05-6 10199-34-5 11121-26-9, Silicotungstate
    12027-38-2 13473-90-0 13568-40-6 15595-35-4,
    Arginine hydrochloride 52241-27-7 53585-56-1 84750-84-5
    139083-47-9
    RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, in antiviral polyoxotungstate compound preparation)

L114 ANSWER 54 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:536759 HCAPLUS
DOCUMENT NUMBER: 117:136759
TITLE: Process using sorbents for removal of sulfur oxides from flue gas and other gas streams
INVENTOR(S): Pinnavaia, Thomas J.; Amarasekera, Jayantha; Polansky, Christine A.
PATENT ASSIGNEE(S): Michigan State University, USA
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9118667	A1	19911212	WO 1991-US3642	19910528
W: CA, JP, KR				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
US 5114691	A	19920519	US 1990-535147	19900608
CA 2064715	AA	19911209	CA 1991-2064715	19910528
EP 486676	A1	19920527	EP 1991-912279	19910528
EP 486676	B1	19961009		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 04506932	T2	19921203	JP 1991-511454	19910528
JP 07022678	B4	19950315		
AT 143827	E	19961015	AT 1991-912279	19910528
CN 1057211	A	19911225	CN 1991-103857	19910608

PRIORITY APPLN. INFO.:

US 1990-535147	A	19900608
US 1990-466984	A2	19900118
WO 1991-US3642	W	19910528

AB The gases are contacted with a heated sorbent **composition** consisting of the layered double hydroxide structure [M1-x2+M'x3+(OH)2] (An-)x/n.yH2O where M, M' represent metal cations which form oxides and are capable of reacting with SO2 to form sulfites and with SO3 to form sulfates. A Is an interlayer oxo-anion that comprises ≥1 metal to provide oxidation of SO2 to SO3 (e.g., CrO42-, FeO42-, HVO42-, MoO42-, V10O286-, Mo7O246-, W7O246-), and x = 0.8-0.12. Examples of the sorbents include

[Zn2Al(OH)6]NO3.zH2O and [Mg6Al2(OH)16]OH.xH2O, which are intercalated with anions such as V10O286- and Keggin structures such as SiV3W9O407-. The sorbent can be added to the combustion chamber.

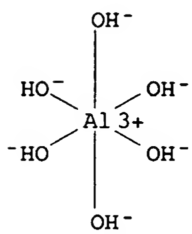
IT **143381-69-5 143381-71-9 143407-85-6**
143407-87-8 143407-88-9 143414-73-7
RL: OCCU (Occurrence)
(sorbent, heated, for desulfurization of flue gases)

RN 143381-69-5 HCAPLUS

CN Tungstate (W12(OH)2O386-), zinc (OC-6-11)-hexahydroxyaluminate(3-) (1:12:6) (9CI) (CA INDEX NAME)

CM 1

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



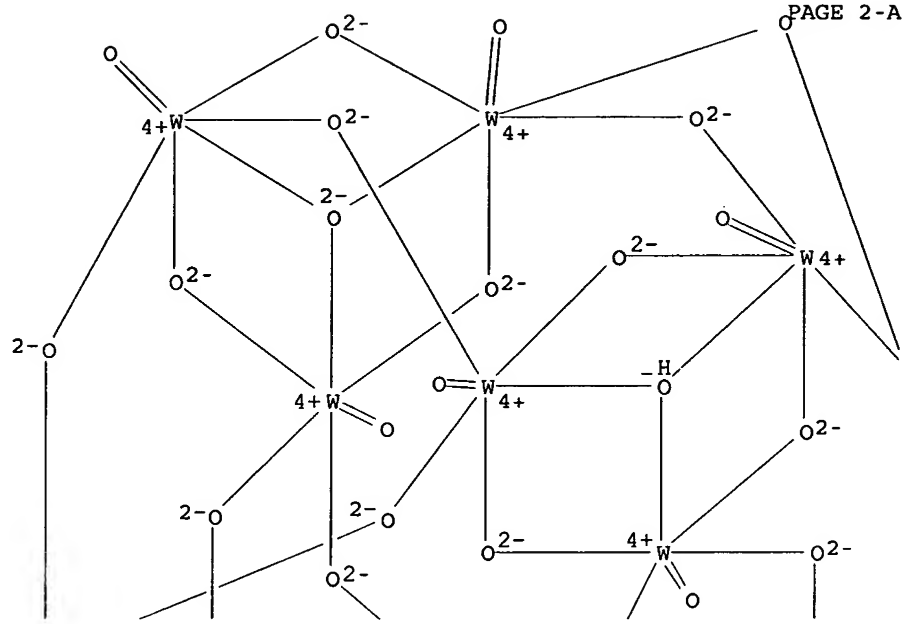
CM 2

CRN 12207-61-3
CMF H2 O40 W12
CCI CCS

PAGE 1-A

2-

PAGE 2-A



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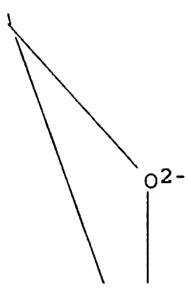

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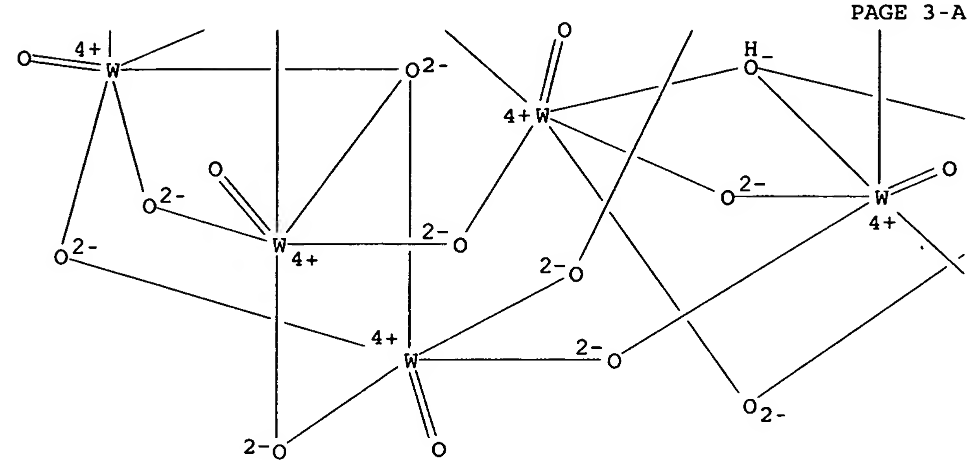

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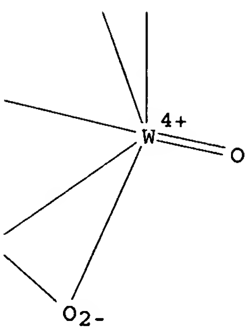


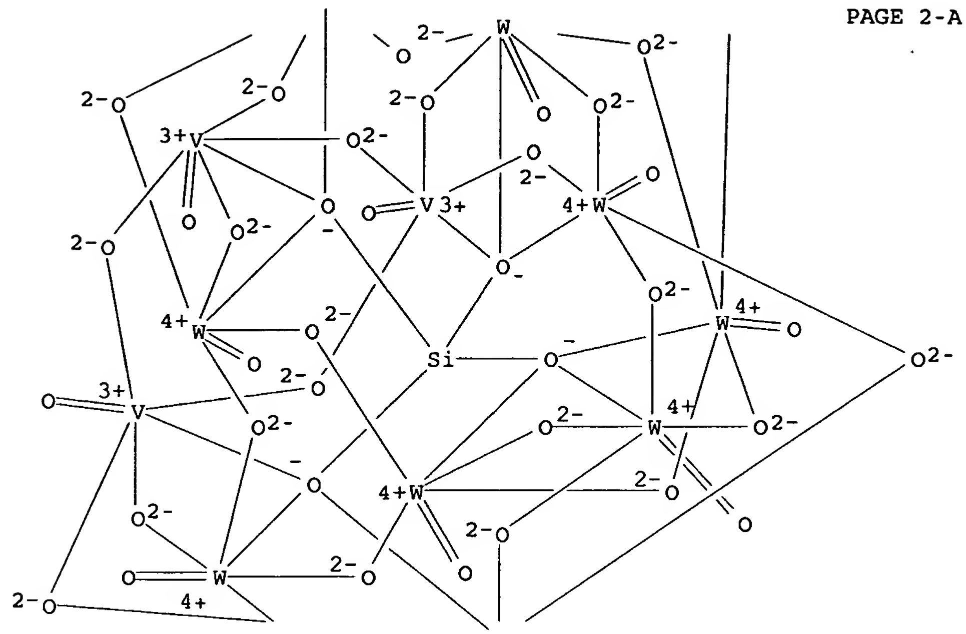
RN 143381-71-9 HCAPLUS
CN Vanadate(7-), [μ12-[orthosilicato(4-)-
O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]nona-μ-
oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, zinc
(OC-6-11)-hexahydroxyaluminate(3-) (1:14:7) (9CI) (CA INDEX NAME)

CM 1

CRN 92816-60-9
CMF O40 Si V3 W9
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

PAGE 2-A



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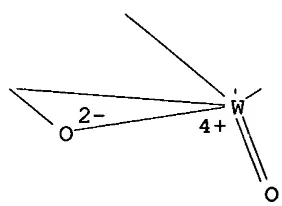
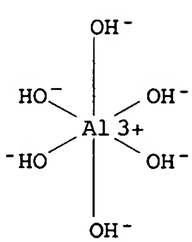


CM 2

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



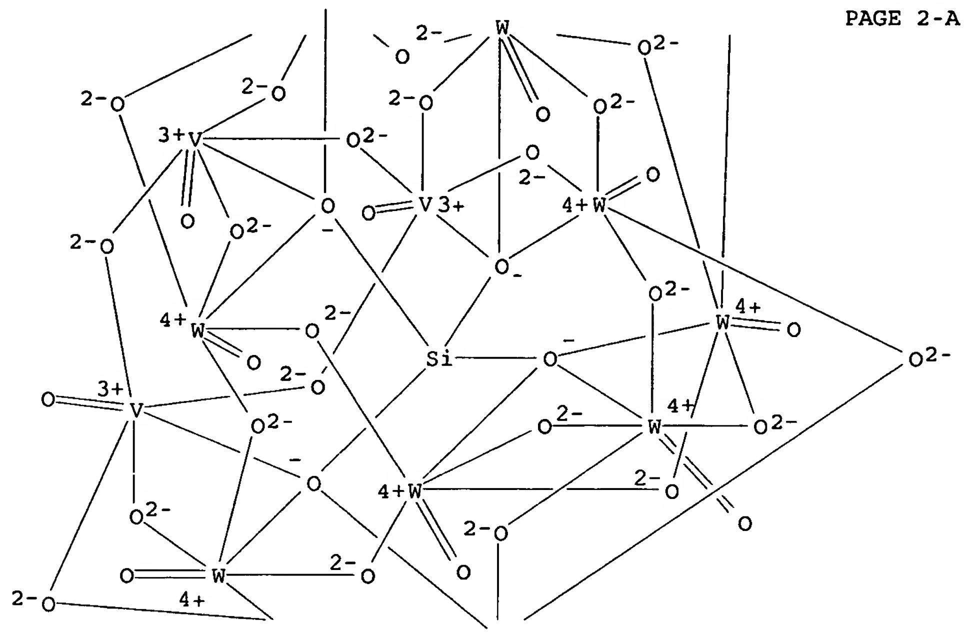
RN 143407-85-6 HCAPLUS
CN Vanadate(7-), [μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]nona-μ-oxotrioxo(pentadeca-μ-oxononaoxononatungstate)tri-, magnesium (OC-6-11)-hexahydroxyaluminate(3-) hydroxide (1:21:7:14) (9CI) (CA INDEX NAME)

CM 1

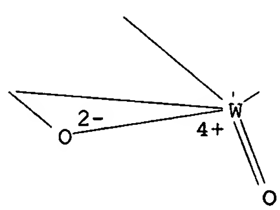
CRN 92816-60-9
CMF O40 Si V3 W9
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

PAGE 2-A

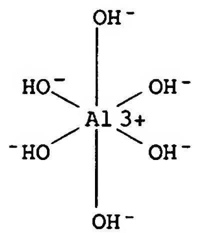


PAGE 3-A



CM 2

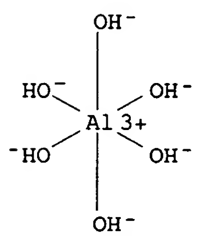
CRN 18893-33-9
CMF Al H6 O6
CCI CCS



RN 143407-87-8 HCAPLUS
CN Tungstate (W12(OH)2O386-), magnesium (OC-6-11)-
hexahydroxyaluminate(3-) hydroxide (1:18:6:12) (9CI) (CA INDEX
NAME)

CM 1

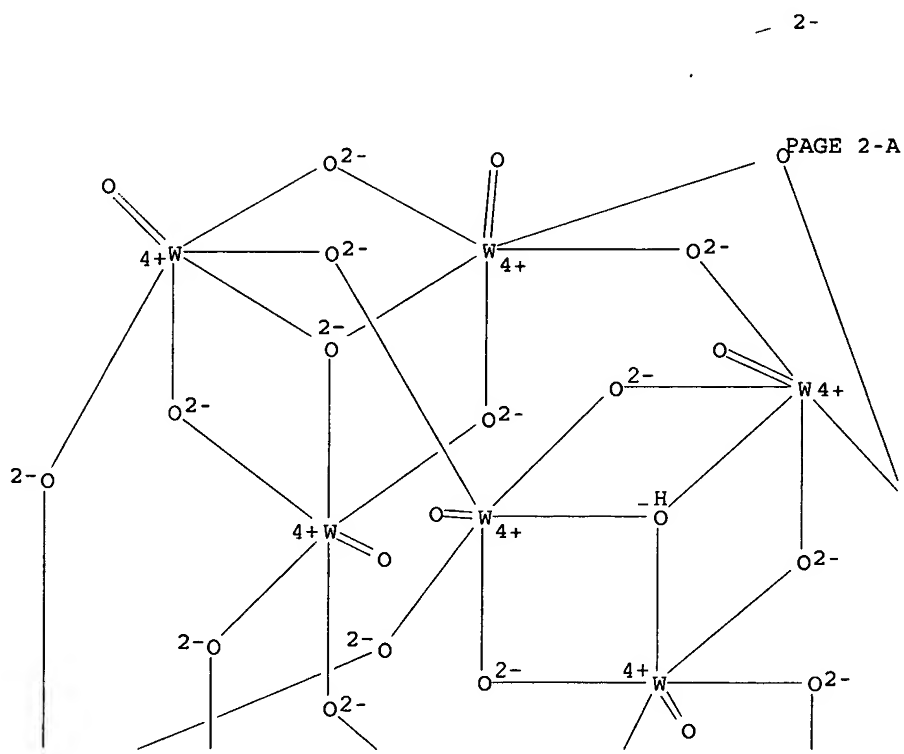
CRN 18893-33-9
CMF Al H6 O6
CCI CCS



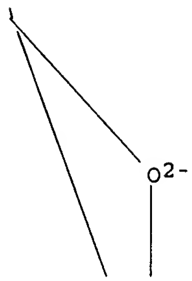
CM 2

CRN 12207-61-3
CMF H2 O40 W12
CCI CCS

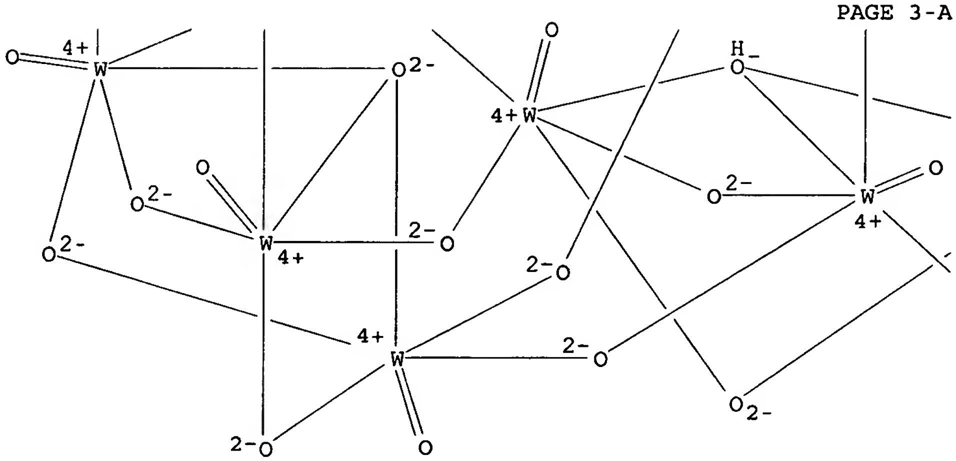
PAGE 1-A



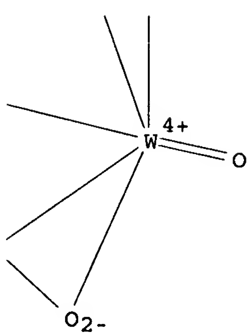
PAGE 2-B



PAGE 3-A



PAGE 3-B



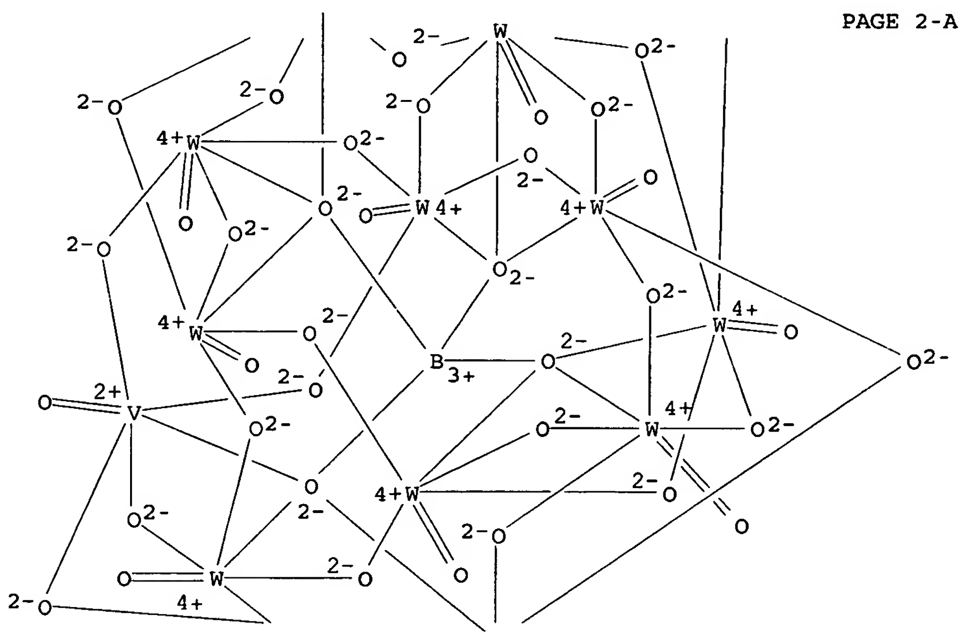
RN 143407-88-9 HCAPLUS
CN Vanadate(7-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]-, magnesium (OC-6-11)-hexahydroxyaluminate(3-) hydroxide (1:21:7:14) (9CI) (CA INDEX NAME)

CM 1

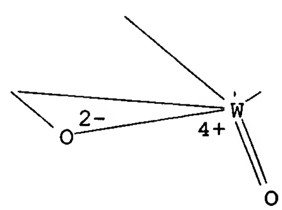
CRN 53260-17-6
CMF B O40 V W11
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A

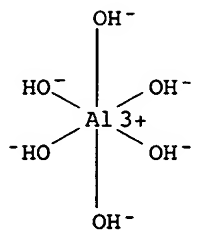


PAGE 3-A



CM 2

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



RN 143414-73-7 HCAPLUS
CN Vanadate(7-), (eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxooxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]-, zinc (OC-6-11)-hexahydroxyaluminate(3-) (1:14:7) (9CI) (CA INDEX NAME)

CM 1

CRN 53260-17-6
CMF B O40 V W11
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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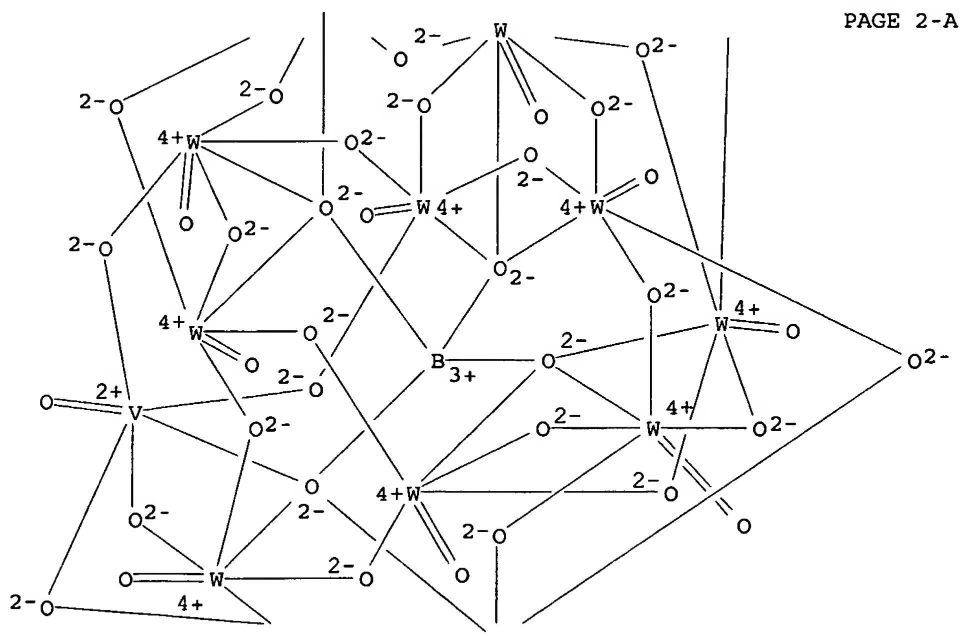

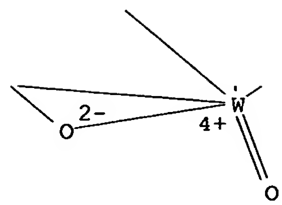

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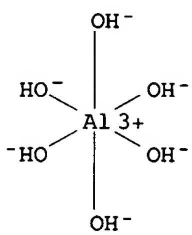
CM 2

CRN 18893-33-9
CMF Al H6 O6
CCI CCS



IC ICM B01J008-00
ICS C01B017-00; C09K003-00
CC 59-4 (**Air Pollution** and Industrial Hygiene)
IT 128423-19-8 128423-25-6 **143381-69-5** 143381-70-8
143381-71-9 143407-78-7 143407-79-8 143407-80-1
143407-81-2 143407-82-3 143407-83-4 143407-84-5
143407-85-6 143407-86-7 **143407-87-8**
143407-88-9 **143414-73-7** 143414-74-8
143441-01-4 143480-78-8 143480-79-9 143480-81-3
143480-83-5
RL: OCCU (Occurrence)
(sorbent, heated, for desulfurization of flue gases)

L114 ANSWER 55 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:688014 HCAPLUS
DOCUMENT NUMBER: 115:288014
TITLE: Negative selectivity in reverse-osmotic separation of heteropoly anions and nitrate ions in an aqueous solutions
AUTHOR(S): Semin, G. L.; Vetchinova, Yu. S.; Il'nich, O. M.; Fedotov, M. A.; Kuznetsova, L. I.; Novopashina, V. M.
CORPORATE SOURCE: Inst. Catal., Novosibirsk, USSR
SOURCE: Khimiya i Tekhnologiya Vody (1991), 13(8), 685-8
CODEN: KTVODL; ISSN: 0204-3556
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The characteristics of **composite** polyamide membranes OPM-K, OPAM-K and OPMN-K (Scientific Industrial **Amalgamation** Polymersintez», Vladimir) relative to retention to the Na salt of the heteropolyacid (HPA) catalyst Na4PW11Fe3+(H2O)O39 and NaNO were determined as functions of pH, pressure, and temperature Expts. on separation of a **mixture** of these salts were performed. The selectivity of heteropolyanion retention greatly exceeds the selectivity of nitrate retention;

this permits efficient separation of HPA from NO3-. The selectivity of nitrate retention from a **mixture** with HPA depends on the HPA concn; with increasing HPA concentration, the selectivity decreases and attains neg. values.

IT **137827-83-9**
RL: PRP (Properties)
(reverse osmosis separation of, on polyamide membranes)

RN 137827-83-9 HCAPLUS

CN Tungstate(4-), (aquaferrate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kap
pa.O':κO'':κO'':κO'':κO''':κO''':.ka
ppa.O''']]undeca-, tetrasodium (9CI) (CA INDEX NAME)

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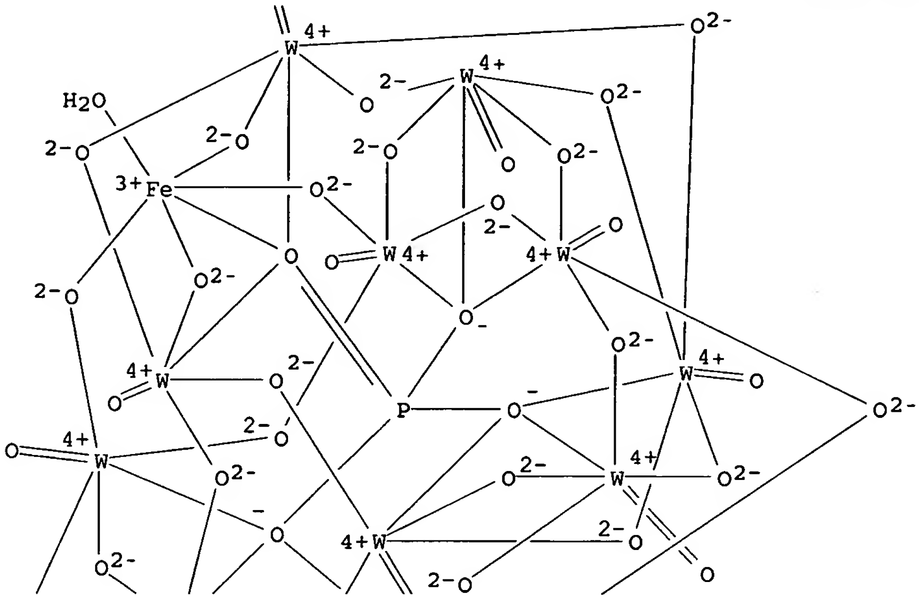
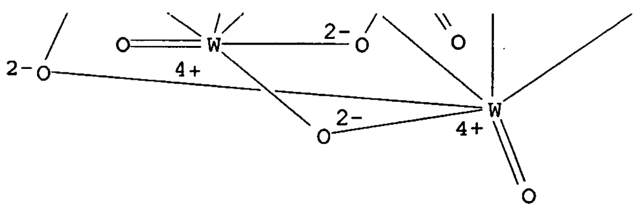


PAGE 3-A



● 4 Na^+

CC 66-4 (Surface Chemistry and Colloids)
Section cross-reference(s): 38, 48, **59**, 60

IT **137827-83-9**
RL: PRP (Properties)
(reverse osmosis separation of, on polyamide membranes)

L114 ANSWER 56 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	1991:670659 HCAPLUS
DOCUMENT NUMBER:	115:270659
TITLE:	Pharmaceutical **composition** containing polyoxymetallate compounds for AIDS treatment
INVENTOR(S):	Murrer, Barry Anthony; Theobald, Brian Ronald Charles; Savage, Paul David
PATENT ASSIGNEE(S):	Johnson Matthey PLC, UK
SOURCE:	Eur. Pat. Appl., 7 pp. CODEN: EPXXDW
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 390365	A1	19901003	EP 1990-302721	19900314
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CA 2012153	AA	19900917	CA 1990-2012153	19900314
HU 53655	A2	19901128	HU 1990-1593	19900314
HU 207333	B	19930329		
US 5093134	A	19920303	US 1990-493342	19900314
ZA 9001993	A	19910130	ZA 1990-1993	19900315
NO 9001232	A	19900918	NO 1990-1232	19900316
AU 9051410	A1	19900920	AU 1990-51410	19900316
AU 622779	B2	19920416		
JP 03047130	A2	19910228	JP 1990-64457	19900316

PRIORITY APPLN. INFO.: GB 1989-6189 A 19890317

AB Polyoxymetallate compds. Ax[MDLW11O39].yH2O (I) and Ax[D'(MW11O39)2].yH2O (A = cation; x = integer varying with M and oxidation state of D or D'; M = B, Si, P; D = metal; D' = lanthanide in oxidation state 3 or 4; L = neutral or anionic ligand; y = integer; provided that when D = Co, V, or Al, L ≠ H2O) are in pharmaceutical **compns.** for the treatment of human immunodeficiency virus (HIV)-infected patients or prophylactic treatment of patients at risk from HIV infection. K15[Er(BW11O39)2].yH2O was prepared by reacting Na2WO4.2H2O and boric acid, and treating the [BW11O39]9- species produced with Er(NO3)3.5H2O. Compds. I exhibited selective activity against HIV-1 and HIV-2 in infected cells and their **toxicity** was much less than that of HPH-23 (NaSb9W21O86). For example, K13[Ce(SiW11O39)2].26H2O had a CD50 (50% cytotoxic dose) of >1000.0 μg/mL, an antiviral ED50 value of 0.39 μg/mL, and a selectivity index (SI = CD50/ED50) of >2561 against HIV-1 in infected MT-4 cells.

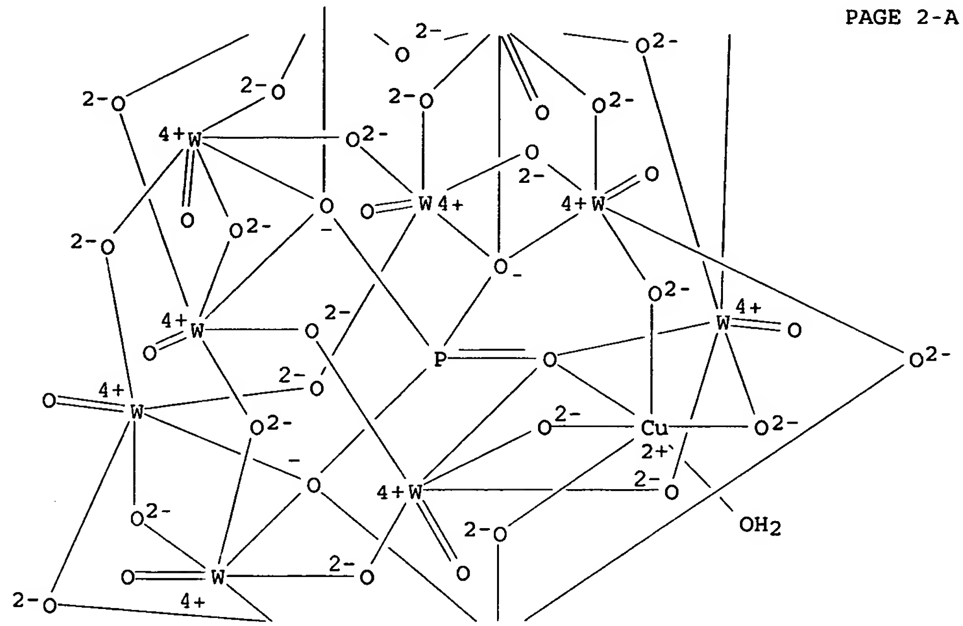
IT **66257-58-7D**, salt hydrates **66304-44-7D**, salt hydrates **66304-53-8D**, salt hydrates **81552-96-7** **81553-01-7D**, salt hydrates **81553-37-9D**, salt hydrates **135143-89-4D**, salt hydrates **135211-05-1D**, salt hydrates **136292-63-2D**, salt hydrates **136314-55-1D**, salt hydrates
RL: BIOL (Biological study)
(AIDS treatment with)

RN 66257-58-7 HCAPLUS

CN Tungstate(5-), (aquacuprate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kap pa.O':κO'':κO'':κO'':κO''':κO''':.ka ppa.O''']]undeca-, pentahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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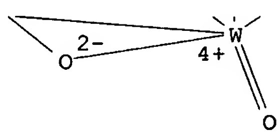

●5 H^+

RN 66304-44-7 HCAPLUS
CN Tungstate(6-), (aquacobaltate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxoundecaoxoundeca-, hexahydrogen (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 66304-53-8 HCAPLUS
CN Tungstate(6-), (aquanickelate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxoundecaoxoundeca-, hexahydrogen (9CI) (CA INDEX NAME)

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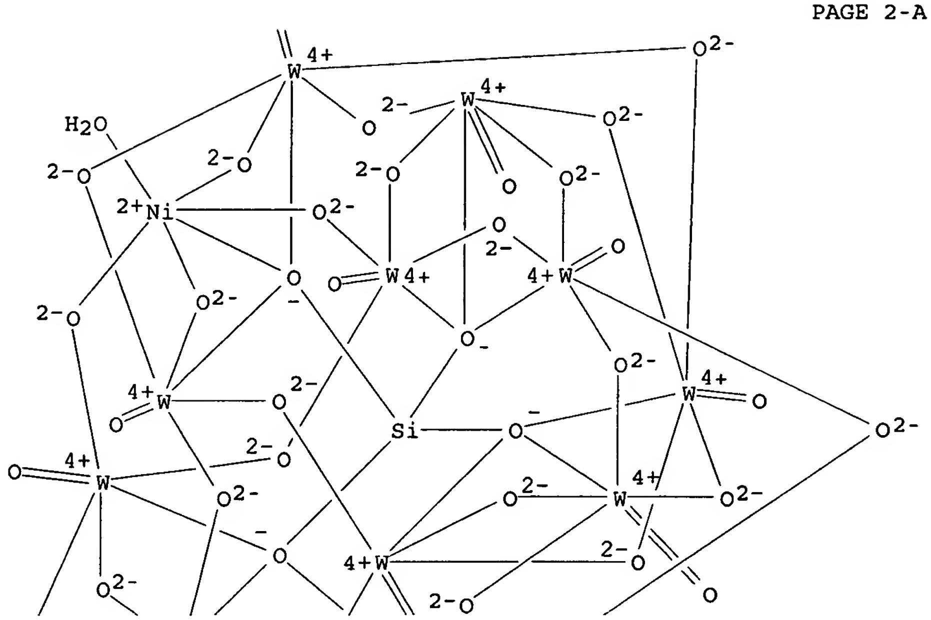
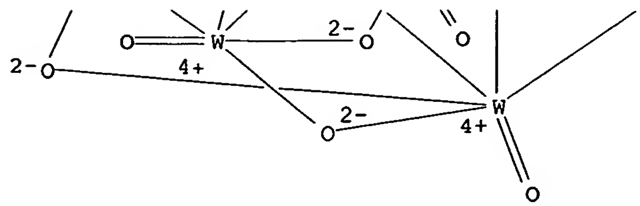


PAGE 3-A

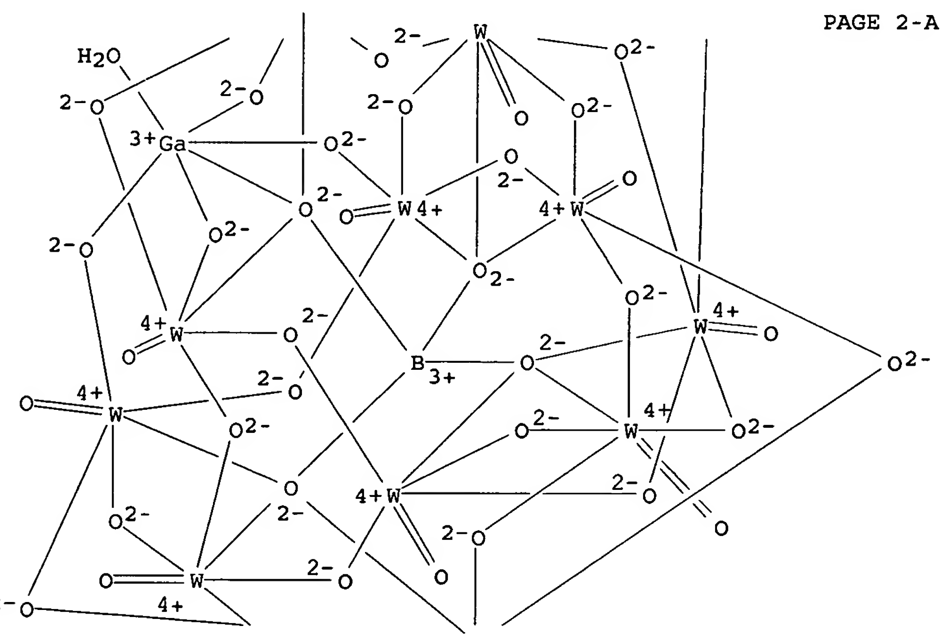


●6 H^+

RN 81552-96-7 HCAPLUS
CN Tungstate(6-), (aquagallate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']undeca-, hexahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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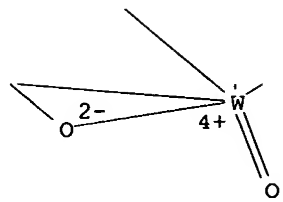

●6 H^+

RN 81553-01-7 HCAPLUS
CN Tungstate(6-), (aquarhodate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]undeca-, hexahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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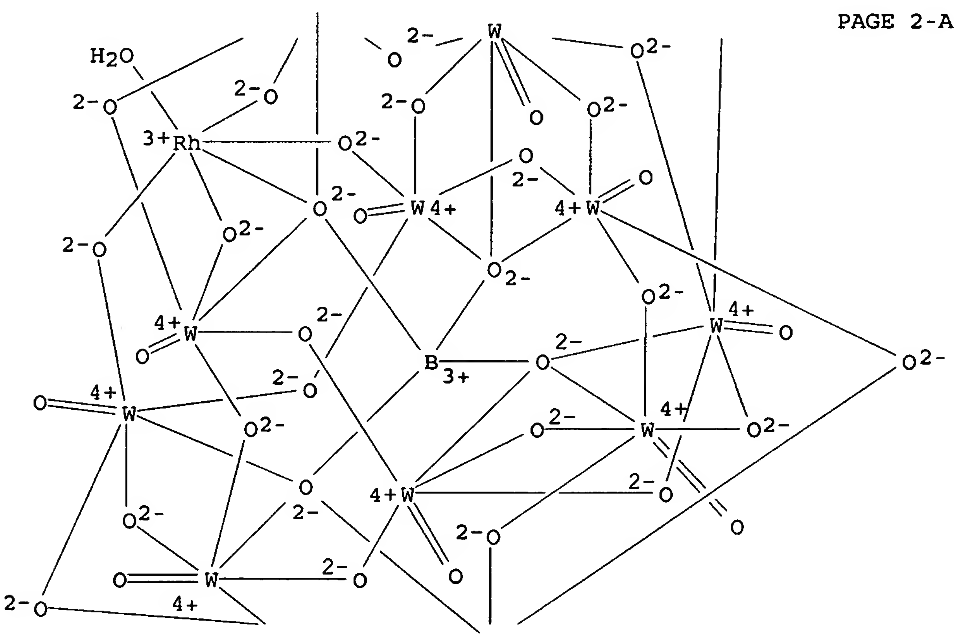

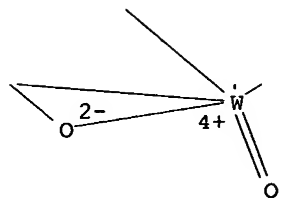

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●6 H^+

RN 81553-37-9 HCAPLUS
CN Tungstate(5-), (aquagallate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxoundecaoxoundeca-, pentahydrogen (9CI) (CA INDEX NAME)

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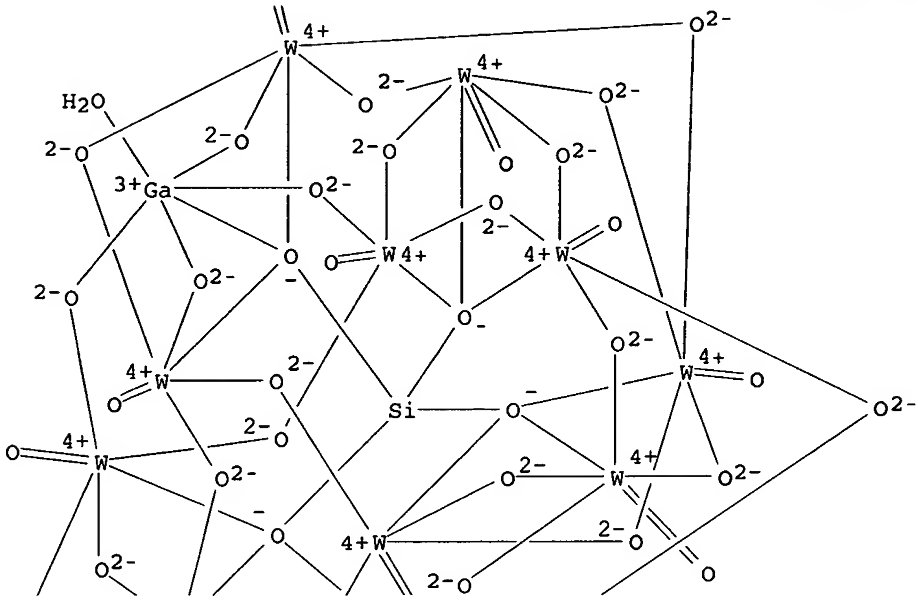
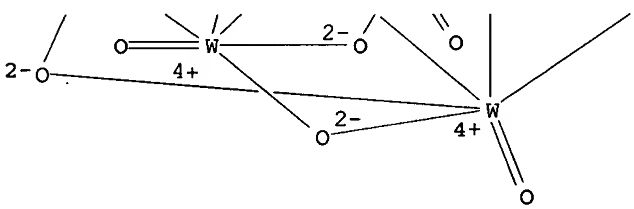


PAGE 3-A



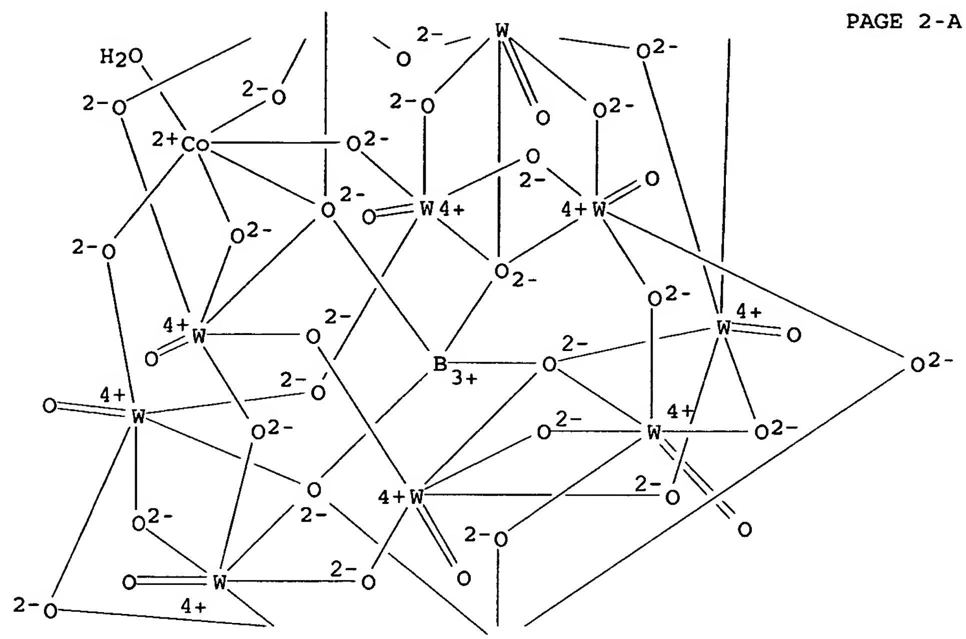
●5 H^+

RN 135143-89-4 HCAPLUS

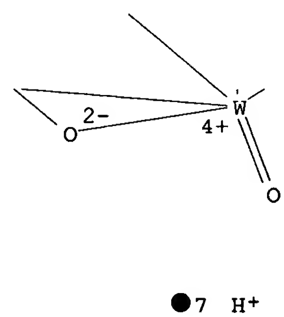
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']undeca-, heptahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



RN 135211-05-1 HCAPLUS
CN Tungstate(6-), (aquacuprate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxoundecaoxoundeca-, hexahydrogen (9CI) (CA INDEX NAME)

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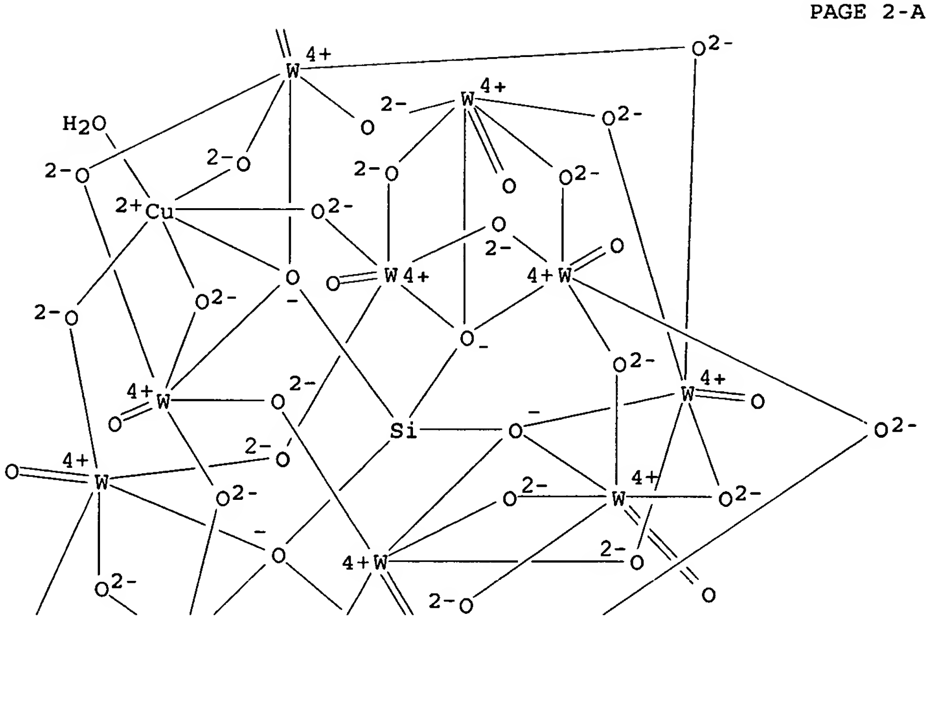
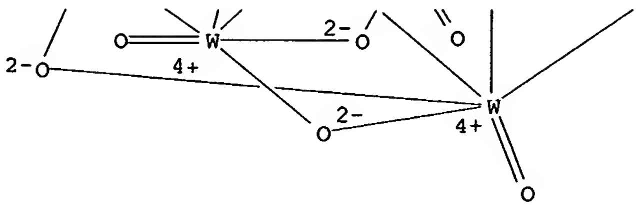


PAGE 3-A



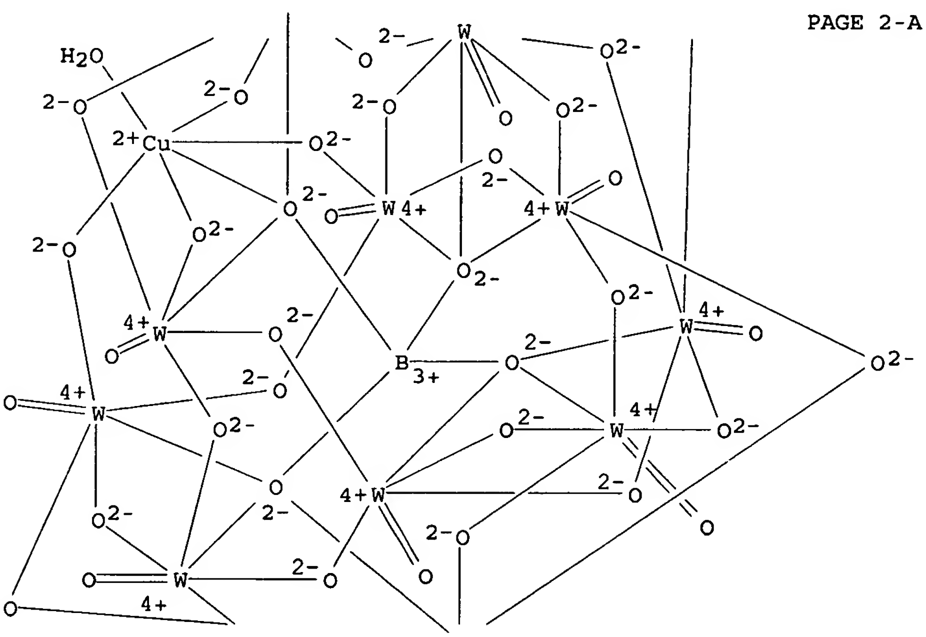
● 6 H^+

RN 136292-63-2 HCAPLUS

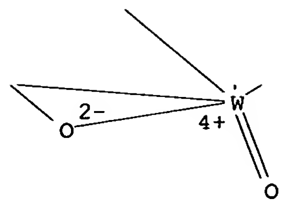
CN Tungstate(7-), (aquacuprate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'',O'':O'':O''':O''':O''']undeca-, heptahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



●7 H^+

RN 136314-55-1 HCAPLUS
CN Tungstate(7-), (aquaplatinate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]undeca-, heptahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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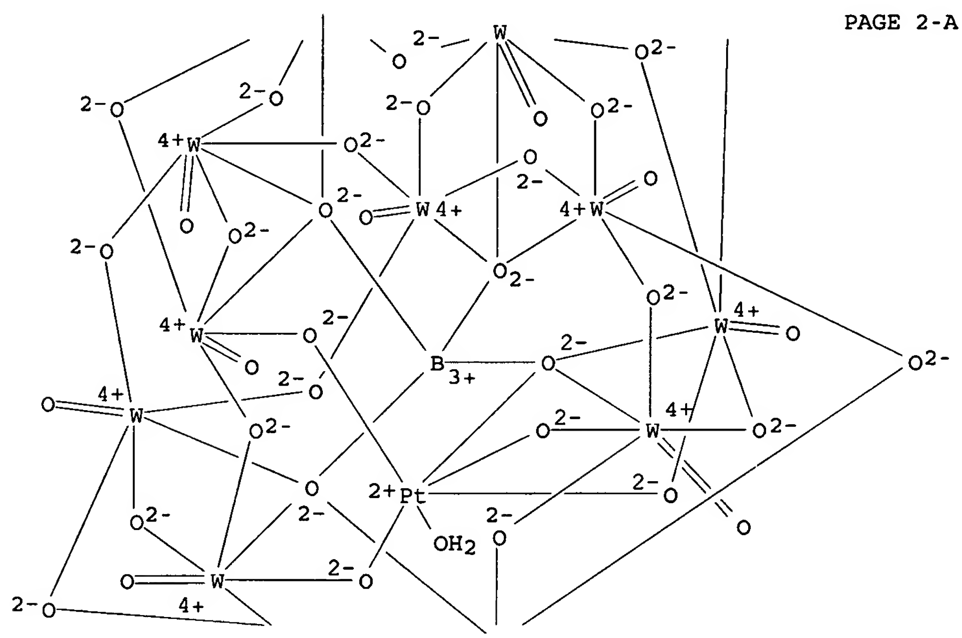

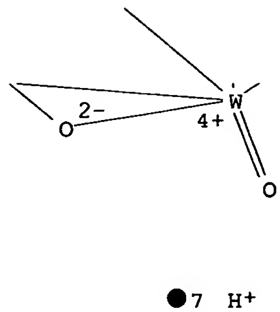

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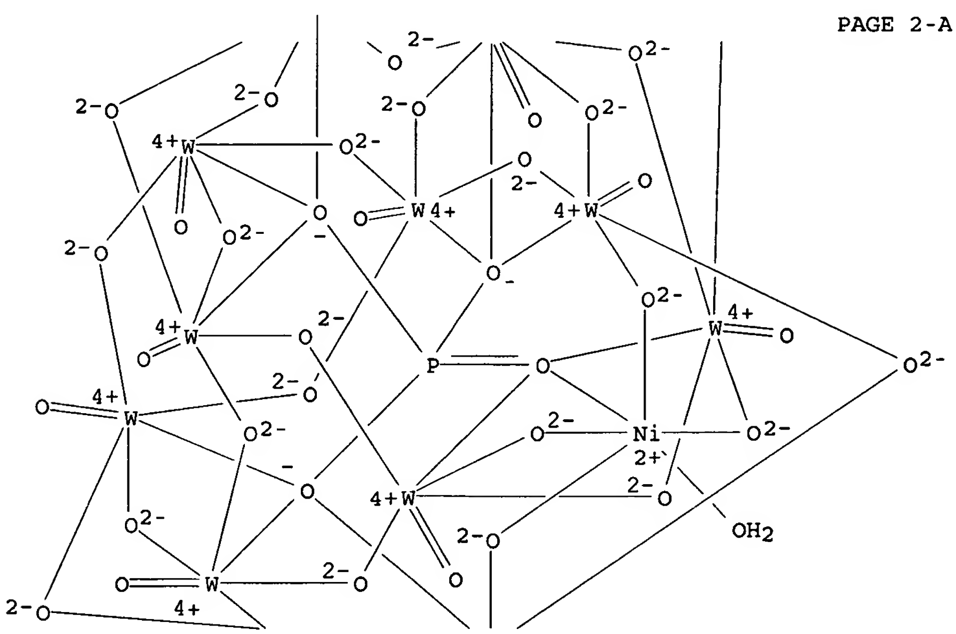
IT 37194-75-5 37194-76-6 39291-87-7
81552-97-8 81553-02-8 81553-38-0
105785-76-0 135143-90-7 135244-69-8
135266-66-9 137679-48-2
RL: BIOL (Biological study)
(human immunodeficiency virus infection treatment with)

RN 37194-75-5 HCAPLUS

CN Tungstate(5-), (aquanickelate)tetracosa-μ-oxoundecaoxo[μ12-
[phosphato(3-)-κO:κO:κO:κO':κO':.kap
pa.O'κO'':κO'':κO'':κO''':κO''':.kap
pa.O''']]undeca-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



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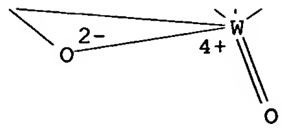

●5 K^+

RN 37194-76-6 HCAPLUS
CN Tungstate(6-), (aquanickelate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxoundecaoxoundeca-, hexapotassium (9CI) (CA INDEX NAME)

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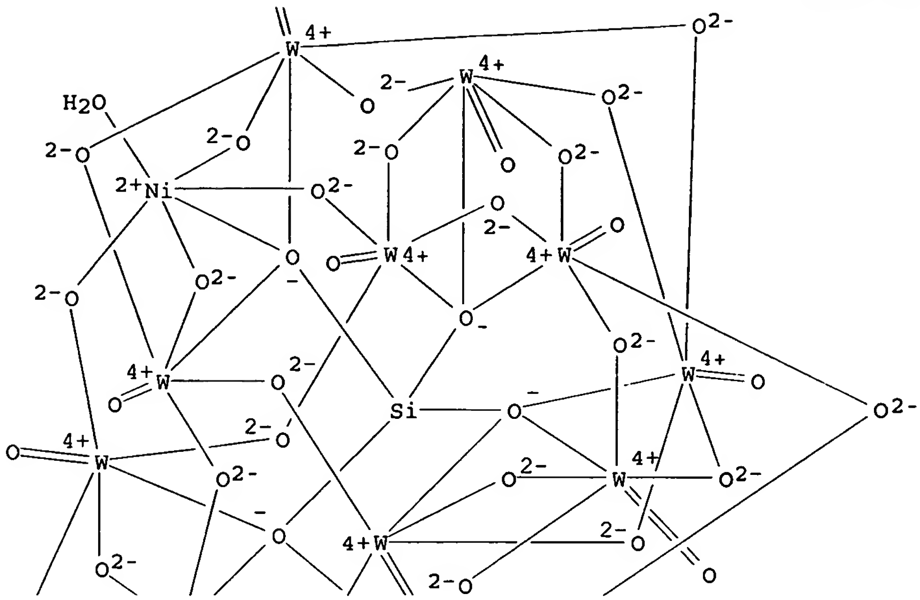
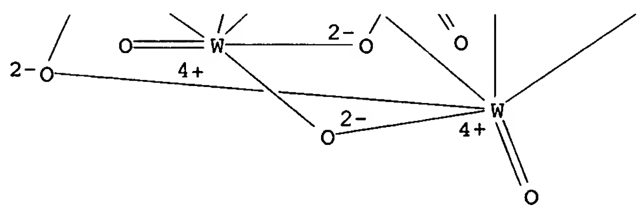
PAGE 2-A



PAGE 3-A

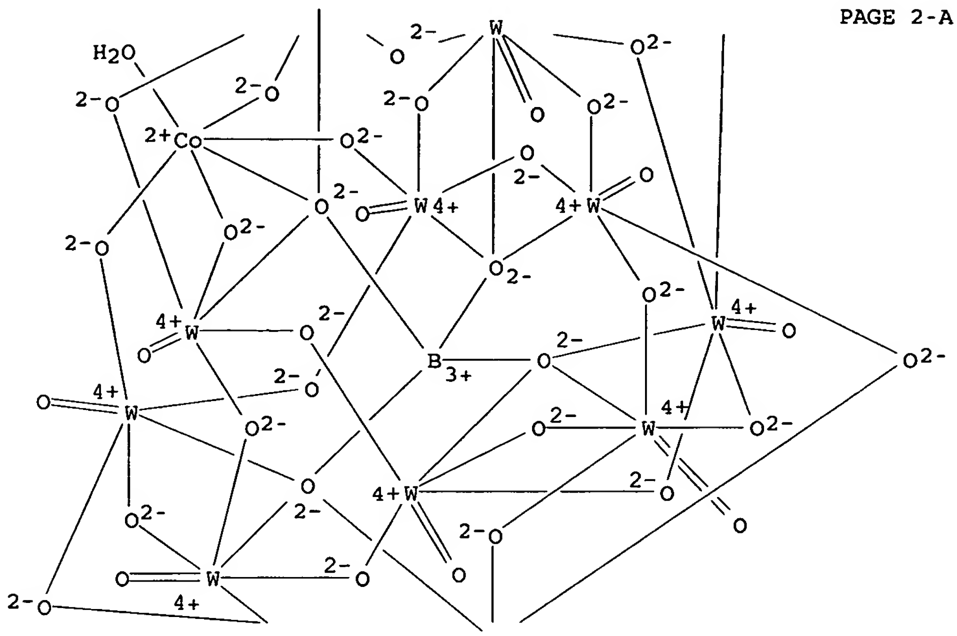


●6 K^+

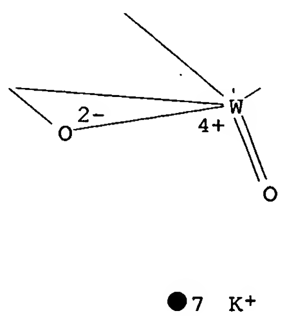
RN 39291-87-7 HCAPLUS
CN Tungstate(7-), (aquacobaltate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]undeca-, heptapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



PAGE 3-A



RN 81552-97-8 HCAPLUS
CN Tungstate(6-), (aquagallate)tetracosa-μ-oxoundecaoxo[μ12-
[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp
a.O':κO':κO'':κO'':κO'':κO''':.kappa
.O''':κO''']]undeca-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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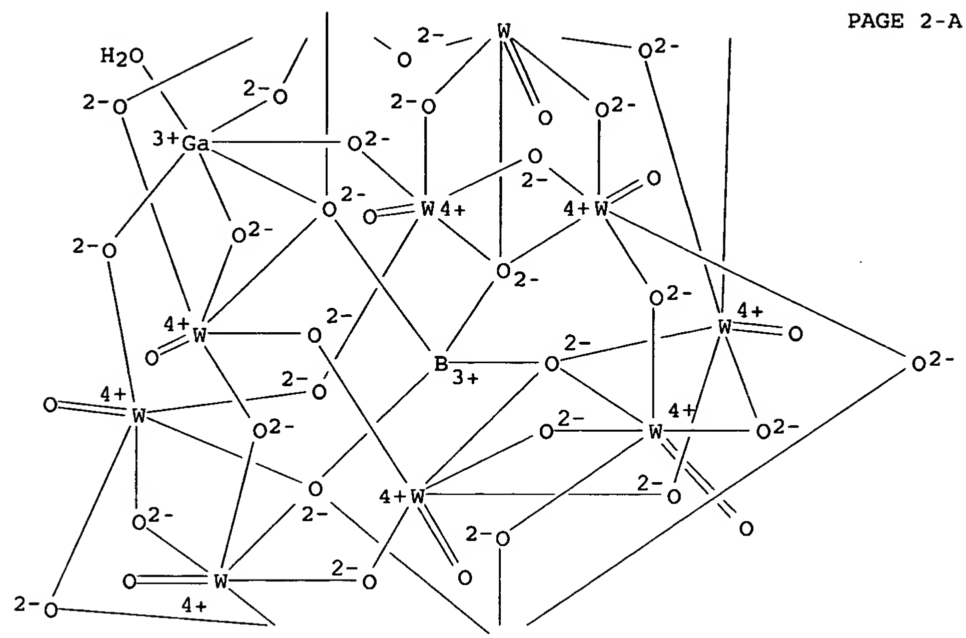
PAGE 2-A



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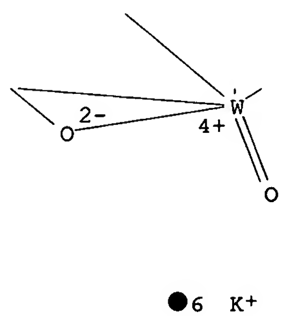
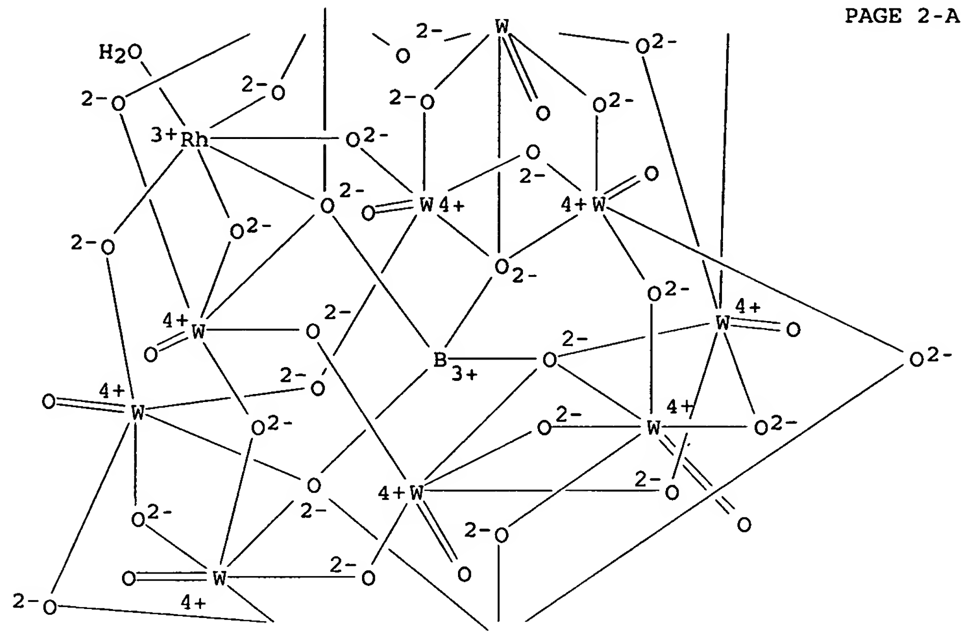


RN 81553-02-8 HCAPLUS
CN Tungstate(6-), (aquarhodate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]undeca-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A



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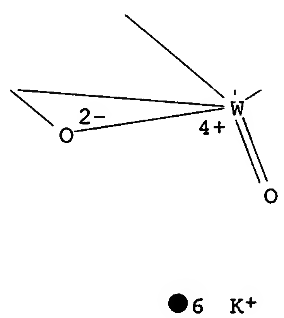

RN 81553-38-0 HCAPLUS
CN Tungstate(5-), (aquagallate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]tetra
cosa-μ-oxoundecaoxoundeca-, pentapotassium (9CI) (CA INDEX NAME)

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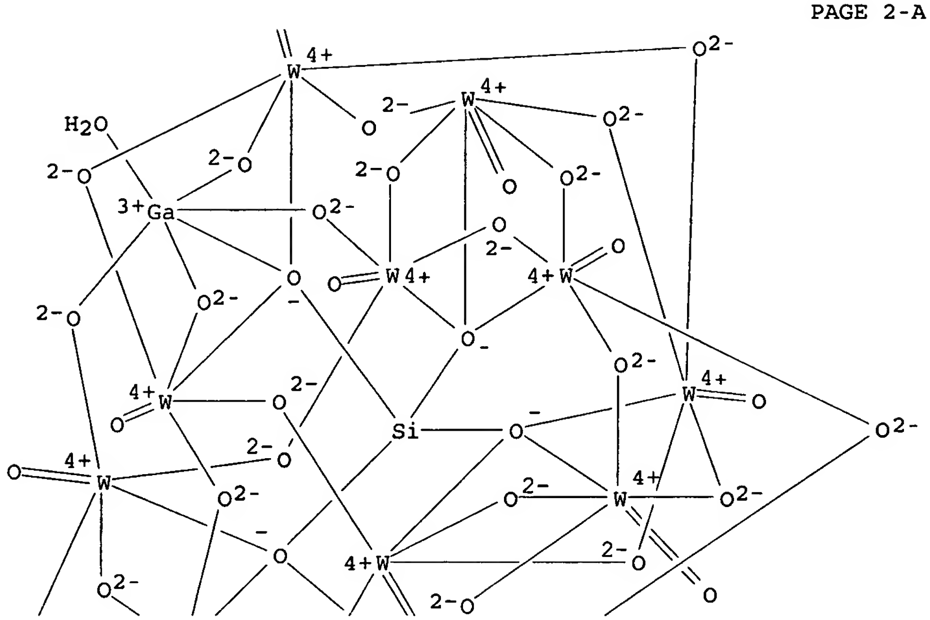
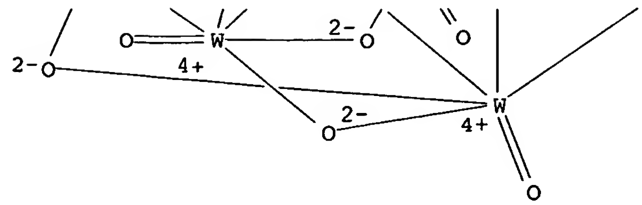


PAGE 3-A



●5 K^+

RN 105785-76-0 HCAPLUS
CN Tungstate(6-), (aquacobaltate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxoundecaoxoundeca-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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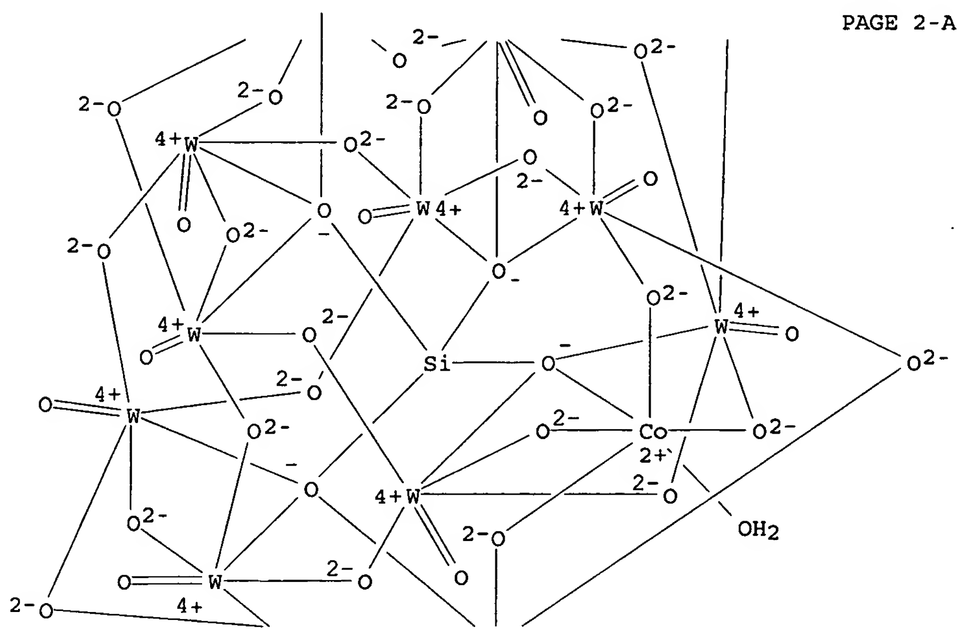

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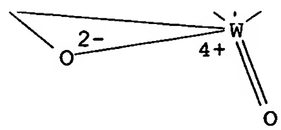

●6 K+

RN 135143-90-7 HCAPLUS

CN Tungstate(7-), (aquacuprate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kapp a.O':κO':κO'':κO'':κO'':κO''':.kappa .O''':κO''']]undeca-, heptapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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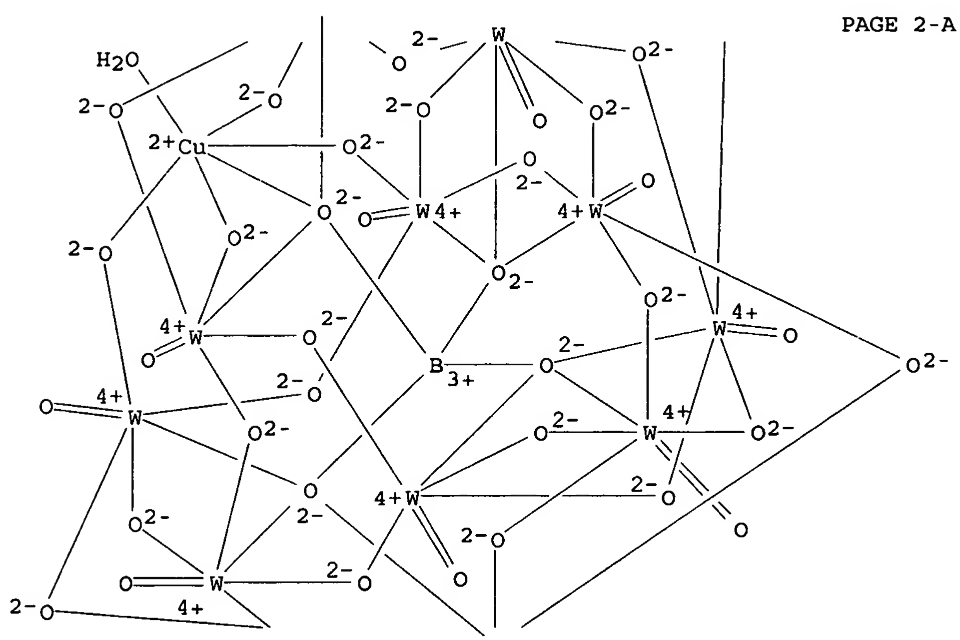

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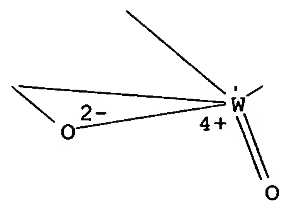

●7 K^+

RN 135244-69-8 HCAPLUS
CN Tungstate(5-), (aquacuprate)tetracosa-μ-oxoundecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':.kappa.O':κO'':κO'':κO'':κO''':κO''':.kappa.O''']]undeca-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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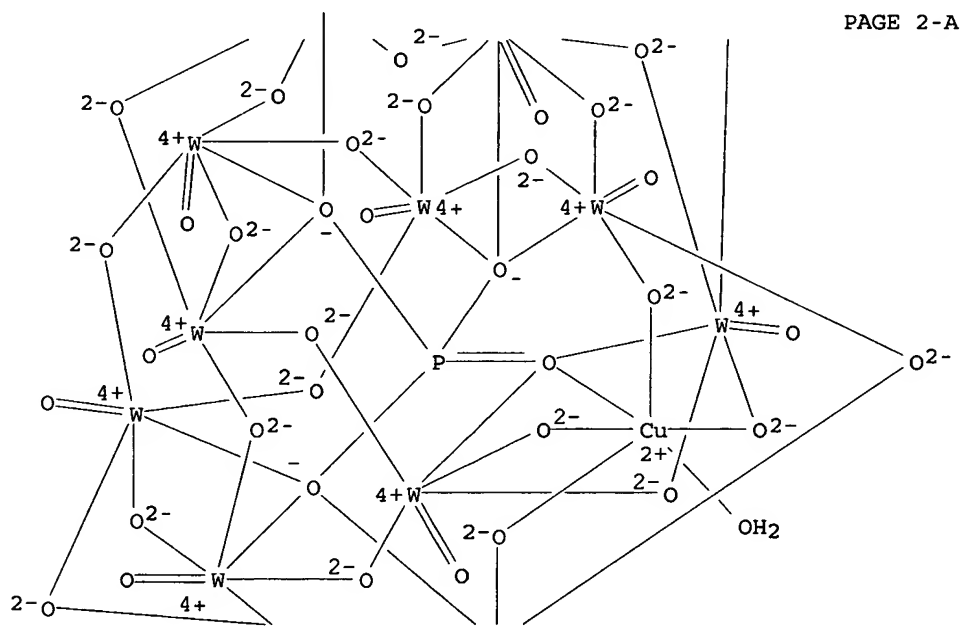

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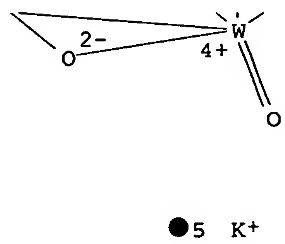

RN 135266-66-9 HCAPLUS
CN Tungstate(6-), (aquacuprate)[μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxoundecaoxoundeca-, hexapotassium (9CI) (CA INDEX NAME)

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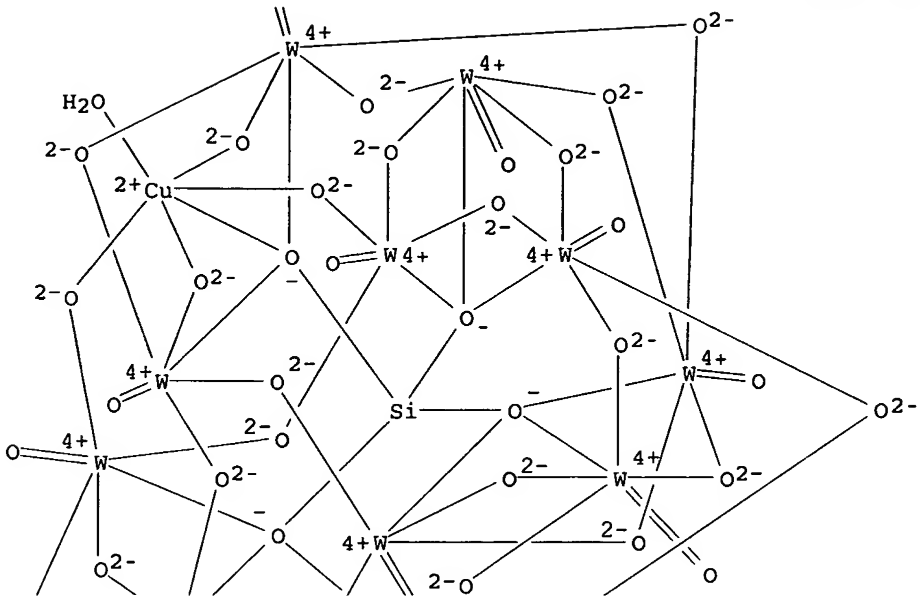

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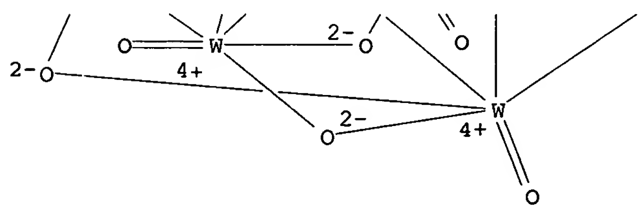
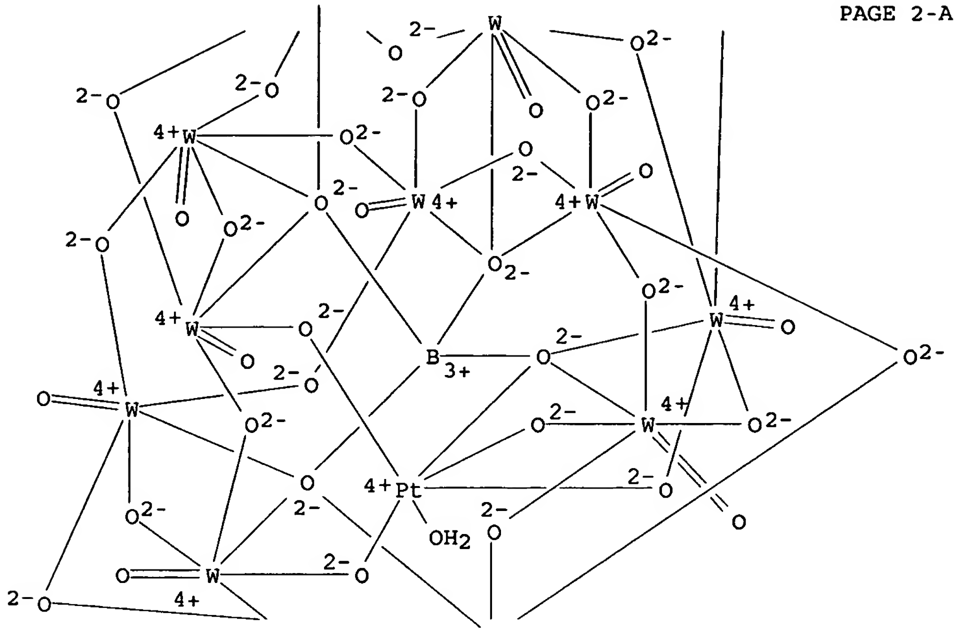


●6 K^+

RN 137679-48-2 HCAPLUS

CN Tungstate(5-), (aquaplatinate)tetracosa-μ-oxoundecaoxo[μ12-[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]undeca-, pentapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



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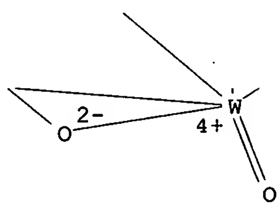

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● 5 K^+

IC ICM A61K033-24
ICS A61K033-42
CC 1-5 (**Pharmacology**)
Section cross-reference(s): 63, 78
IT **66257-58-7D**, salt hydrates **66304-44-7D**, salt hydrates **66304-53-8D**, salt hydrates **81552-96-7** **81553-01-7D**, salt hydrates **81553-37-9D**, salt hydrates 108174-18-1D, salt hydrates **135143-89-4D**, salt hydrates **135211-05-1D**, salt hydrates 135244-67-6D, salt hydrates 135500-08-2D, salt hydrates 135523-13-6D, salt hydrates **136292-63-2D**, salt hydrates **136314-55-1D**, salt hydrates
RL: BIOL (Biological study)
(AIDS treatment with)
IT **37194-75-5** **37194-76-6** **39291-87-7** **81552-97-8** **81553-02-8** **81553-38-0** **105785-76-0** 106096-53-1 **135143-90-7** 135244-68-7 **135244-69-8** **135266-66-9** 135596-17-7 135635-38-0 **137679-48-2**
RL: BIOL (Biological study)
(human immunodeficiency virus infection treatment with)

L114 ANSWER 57 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:661849 HCAPLUS
DOCUMENT NUMBER: 115:261849
TITLE: Ceramic **compositions** for insulating parting layers in two-stage precision casting and their manufacture
INVENTOR(S): Wall, Giselher
PATENT ASSIGNEE(S): Germany
SOURCE: Ger. Offen., 9 pp. Addn. to Ger. Offen. 3,903,427.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
DE 4001057	A1	19910718	DE 1990-4001057		1990 0116
DE 4001057	C2	19960711			
DE 3903427	A1	19900809	DE 1989-3903427		1989 0206
DE 3903427	C2	19921105			
DD 293972	A5	19910919	DD 1990-337661		1990 0207
PRIORITY APPLN. INFO.:			DE 1989-3903427		1989 0206
			DE 1990-4001057	A	1990 0116

AB The parting layer, mech. applied to the primary part and then sintered, comprise (a) ≥1 alkaline earth oxides, a rare earth oxide, Al_2O_3 or a Ti-group oxide, or (b) ≥1 double oxides, or a **mixture** of a metal oxide and a nonmetal oxide, e.g., B_2O_3, P_2O_5, or SiO_2, and corresponding compds. in which the O is replaced by a halogen, especially F. The layers are prepared from ceramic **compns.** containing high-melting particles consist of an oxide as above or SiC, SiO_2 fume, or a nitride and low-melting particles of stoichiometrically defined double or **mixed** oxides and correspond to an anhydrous salt of silicic, phosphoric, boric, or metal acid, including halogen-free heteropolyacids and Keggin acids, in which O may be replaced by halogen, preferably F, and the cation is an alkali metal ion, preferably K. The 2-stage precision casting method is especially suitable for the manufacture of dental material anchors, e.g., double crowns, and jewelry. Parting layers, prepared from TiO_2 and red Fe oxide in 50% aqueous H_3PO_4 containing .apprx.5% glycol were resistant against Au alloys.

IT **113857-50-4**, Tungstosilicic acid
RL: USES (Uses)
(in ceramic parting layer manufacture)

RN 113857-50-4 HCAPLUS

CN Tungstate(6-), [μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxododecaoxododeca-, hexahydrogen (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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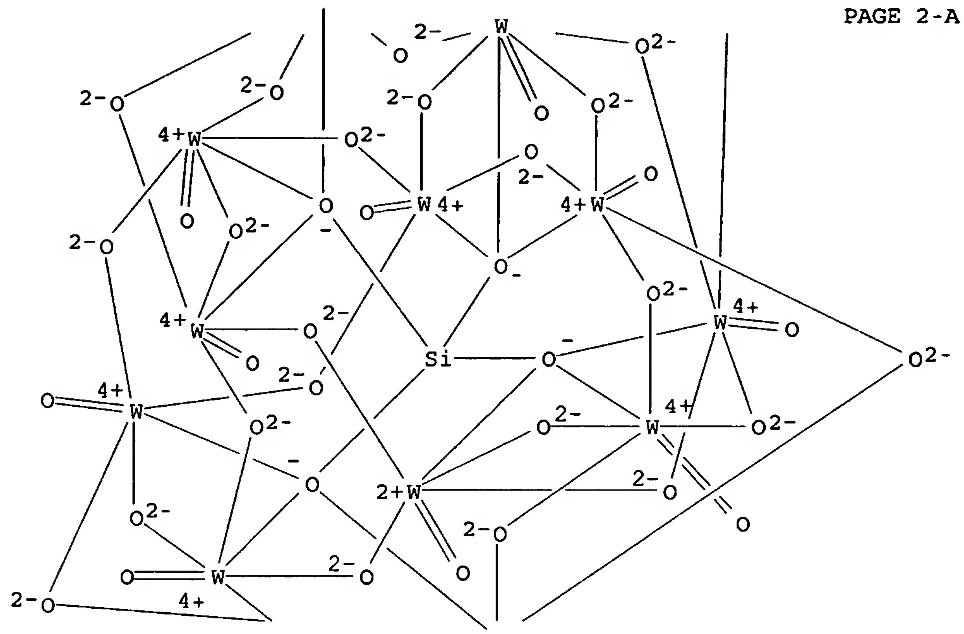
PAGE 2-A



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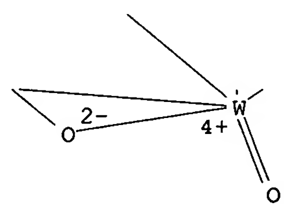

●6 H^+

IC ICM A61K006-06
ICS A61C013-20; A61C013-00; B22C003-00
CC 57-2 (Ceramics)
Section cross-reference(s): 56, 63
IT Alkali metal oxides
Aluminates
Ferrates
Rare earth oxides
Stannates
Tungstates
Vanadates
Zirconates
RL: USES (Uses)
(ceramic parting layer **compns.** containing, for two-stage precision casting)
IT Ceramic materials and **wares**
(parting layers, in two-stage precision casting of dental materials and jewelry)

IT Jewelry and Jewels
(precision casting of, two-stage, ceramic **compns.** for parting layer in secondary casting in)
IT Dental materials and appliances
(alloys, crowns, precision casting of, two-stage, ceramic **compns.** for parting layer in secondary casting in)
IT Group IVB element chalcogenides
RL: USES (Uses)
(oxides, ceramic parting layer **compns.** containing, for two-stage precision casting)
IT Casting process
(precision, two-stage, ceramic **compns.** for parting layer in secondary casting in, for dental materials and jewelry)
IT 137442-83-2 137442-84-3 137442-85-4 137442-86-5
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(casting of, precision, ceramic parting layer **compns.** for, for dental materials and jewelry)
IT 1303-86-2, Boron oxide, uses and miscellaneous 1309-37-1, Iron oxide (Fe2O3), uses and miscellaneous 1314-56-3, Phosphorus pentoxide, uses and miscellaneous 7631-95-0, Sodium molybdate 10043-11-5, Boron nitride, uses and miscellaneous 12033-89-5, Silicon nitride, uses and miscellaneous 12705-37-2, Chromium nitride 13721-39-6, Sodium orthovanadate 13775-52-5, Potassium hexafluoroaluminate 16919-27-0 24304-00-5, Aluminum nitride 24646-85-3, Vanadium nitride 25583-20-4, Titanium nitride
RL: USES (Uses)
(ceramic parting layer **compns.** containing, for two-stage precision casting)
IT 56-81-5, 1,2,3-Propanetriol, uses and miscellaneous 76-09-5, Pinacol 79-39-0, Methacrylic acid amide 107-21-1, 1,2-Ethanediol, uses and miscellaneous 7664-38-2, Phosphoric acid, uses and miscellaneous 9003-39-8, Polyvinylpyrrolidone 11104-88-4, Molybdophosphoric acid 42615-58-7, Tungstoboric acid **113857-50-4**, Tungstosilicic acid
RL: USES (Uses)
(in ceramic parting layer manufacture)

L114 ANSWER 58 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:412131 HCAPLUS
DOCUMENT NUMBER: 107:12131
TITLE: Characteristics of catalysts for low-temperature carbon monoxide oxidation obtained by supporting palladium and heteropolyacid on silica gel
AUTHOR(S): Pavlova, S. N.; Kuznetsova, L. I.; Matveev, K. I.; Sazonov, V. A.; Popovskii, V. V.; Zhizhina, E. G.; Fenelonov, V. B.; Gavrilov, V. Yu.
CORPORATE SOURCE: Inst. Katal., Novosibirsk, USSR
SOURCE: Kinetika i Kataliz (1987), 28(2), 373-9
CODEN: KNKTA4; ISSN: 0453-8811
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB A catalyst consisting of Pd supported on silica gel saturated with the aqueous phase of heteropolyacid (**composition** H7PMo8V4O40.30H2O) was effective for the oxidation of CO in moist waste gases. The oxidation expts. were conducted at 15-30° and 35-100% relative humidity of the waste gases. The maximum CO oxidation (82%) was obtained when the catalyst contained 1.37% Pd and 7.8% heteropolyacid. The catalyst was a 2-phase system consisting of Pd on solid silica gel and heteropolyacid in aqueous phase held by the silica gel pores.
IT **104574-43-8**
RL: OCCU (Occurrence)

(in oxidation catalysts containing palladium, on silica gel, for carbon monoxide removal from moist waste gases)

RN 104574-43-8 HCAPLUS

CN Vanadate(7-), (dodeca-μ-oxooctaoxooctamolybdate)dodeca-μ-oxotetraoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetra-, heptahydrogen, hydrate (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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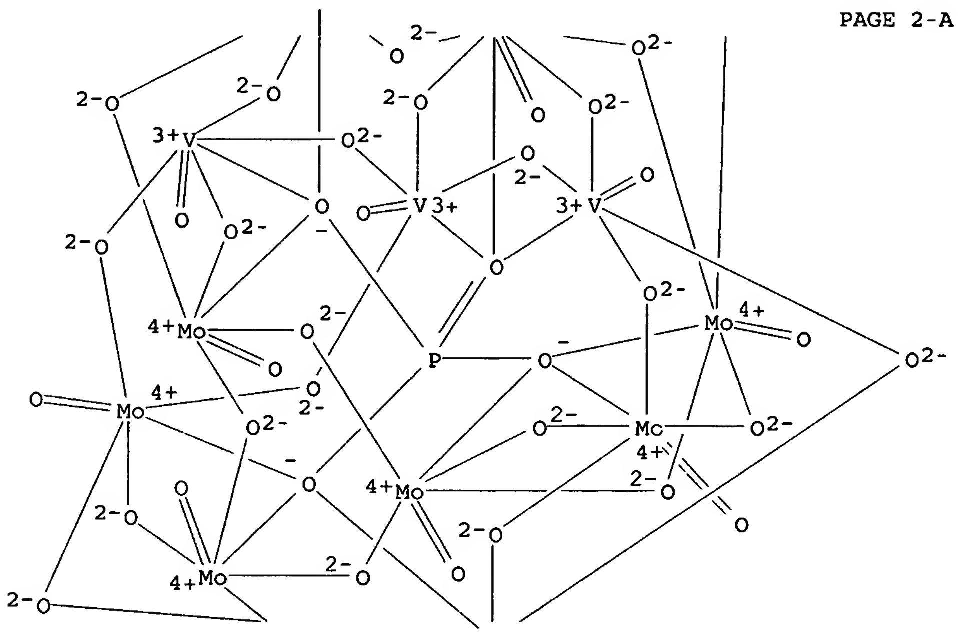

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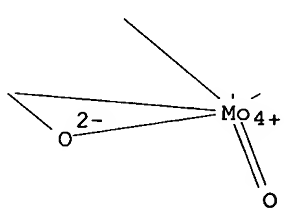

● 7 H^+

● x H_2O

CC 59-4 (**Air Pollution** and Industrial Hygiene)
Section cross-reference(s): 67

IT **104574-43-8**
RL: OCCU (Occurrence)

(in oxidation catalysts containing palladium, on silica gel, for carbon monoxide removal from moist waste gases)

L114 ANSWER 59 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:11207 HCAPLUS
DOCUMENT NUMBER: 104:11207
TITLE: Analytical use of solvent extraction with acetonitrile/water/chloroform and 1-propanol/water/cyclohexane **mixtures**
AUTHOR(S): Hori, T.; Fujinaga, T.
CORPORATE SOURCE: Coll. Lib. Arts Sci., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Talanta (1985), 32(8B), 735-43
CODEN: TLNTA2; ISSN: 0039-9140
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To obtain an organic phase containing MeCN or 1-PrOH from aqueous MeCN or aqueous PrOH solution, the effect of CHCl3 and cyclohexane as auxiliary solvents was investigated. Use of such ternary system offers an alternative to the so-called salting-out method, in which inorg. salts or hydrophilic organic materials are used to sep. organic phases from otherwise miscible solvent **mixts.** It also seems preferable for solvent-extraction procedures, since only a small amount of auxiliary solvent is needed instead of usually large amount of salt (impurities in which may cause undue **contamination**); also, the volume and **composition** of the organic phase can be predicted from phase diagrams and the overall **composition** of the solvent **mixture** Volume-fraction diagrams are easy to use. Furthermore, equilibrium is attained in solvent **mixts.** more rapidly than in salting-out systems. The utility of the ternary solvent systems was demonstrated for extraction of intermediate molybdophosphate complexes which are formed in aqueous acetonitrile solns.

IT **12379-13-4**
RL: PROC (Process)
(extraction of, by acetonitrile-chloroform-water **mixture**)

RN 12379-13-4 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca- (9CI) (CA INDEX NAME)

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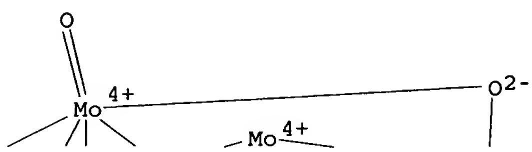

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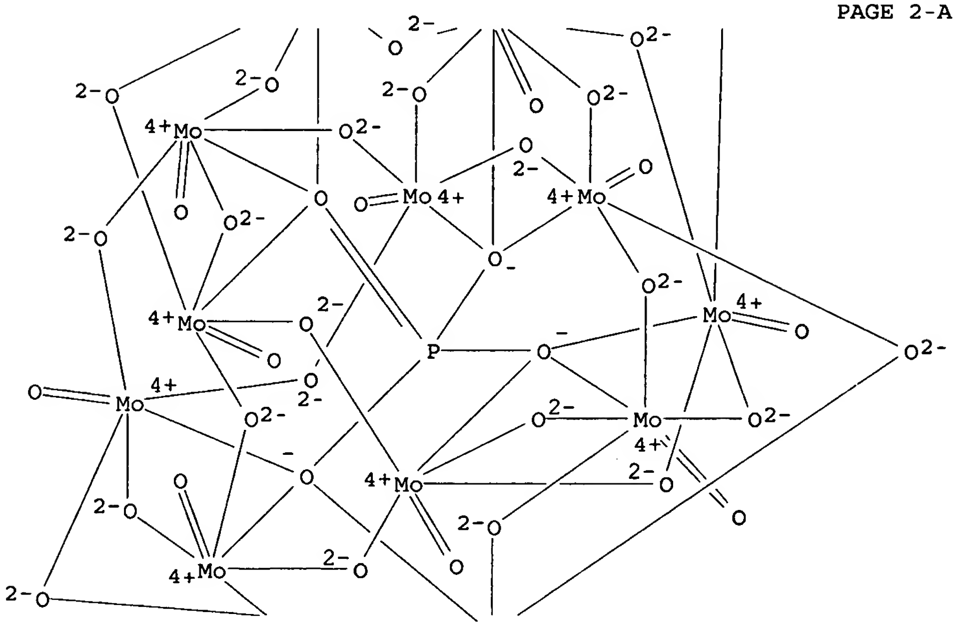

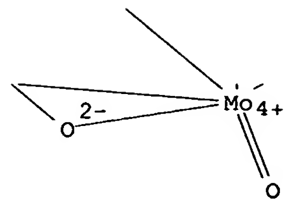

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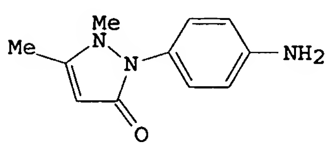
CC 68-2 (Phase Equilibriums, Chemical Equilibriums, and Solutions)
IT **12379-13-4** 14526-22-8
RL: PROC (Process)
(extraction of, by acetonitrile-chloroform-water **mixture**)

L114 ANSWER 60 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:433979 HCAPLUS
DOCUMENT NUMBER: 99:33979
TITLE: Spot tests for cannabis materials
AUTHOR(S): Tewari, S. N.; Sharma, J. D.
CORPORATE SOURCE: Forensic Sci. Lab., Lucknow, India
SOURCE: Bulletin on Narcotics (1982), 34(3-4), 109-12
CODEN: BNUNA5; ISSN: 0007-523X
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Eight spot tests were introduced for the identification of different cannabis drugs. They consisted in testing the suspecting materials with gel layer or filter paper strips **impregnated** with chromogenic substances [for example p-aminoantipyrine (I) [69267-59-0], tetrazolium blue [1871-22-3], etc.]. All the tests gave satisfactory results especially when gel layers were used as the reaction surfaces. The test which used cinnamaldehyde [104-55-2] as the chromogenic agent was the most sensitive, it detected 0.1, 0.5, and 2.0 µg/mL of the cannabis species resin, ganja, and bhang, resp.
IT **12026-57-2**
RL: BIOL (Biological study)
(cannabis materials detection by, in spot test)
RN 12026-57-2 HCAPLUS
CN Molybdate(3-), tetracosa-µ-oxododecaoxo[µ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, trihydrogen (9CI) (CA INDEX NAME)

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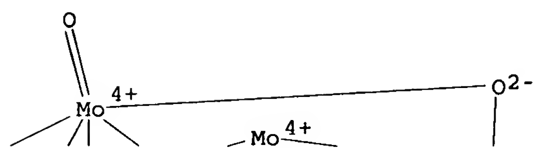

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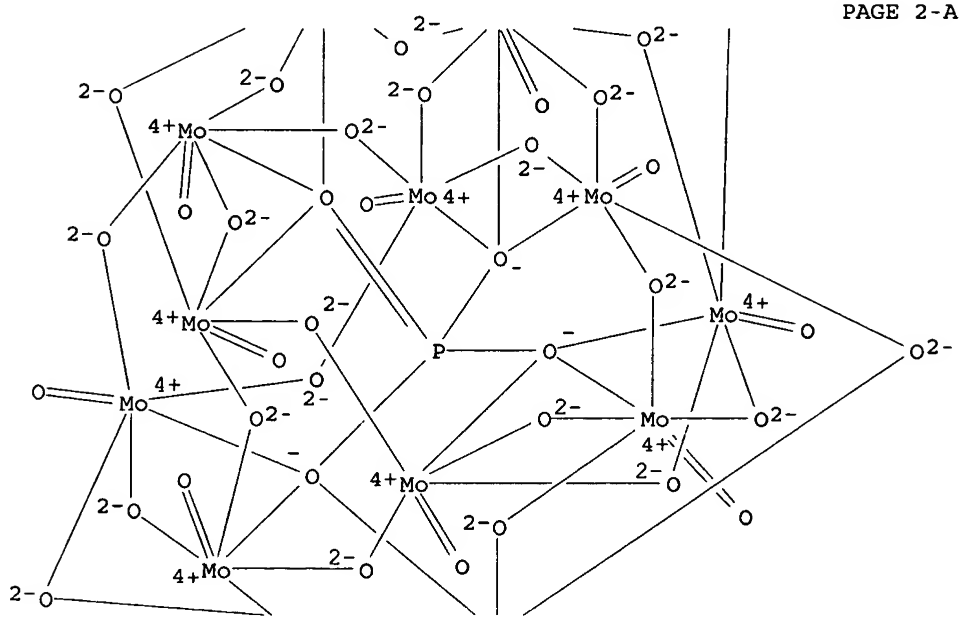
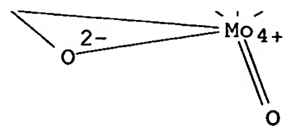


PAGE 3-A



●3 H^+

CC 4-2 (**Toxicology**)
IT 103-84-4 104-55-2 108-24-7 123-30-8 366-18-7 1310-58-3, biological studies 1310-73-2, biological studies 1871-22-3 7664-93-9, biological studies **12026-57-2** 27766-45-6 69267-59-0
RL: BIOL (Biological study)
(cannabis materials detection by, in spot test)

L114 ANSWER 61 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:217344 HCAPLUS
DOCUMENT NUMBER: 98:217344
TITLE: Fluororesin-containing coating **composition**
INVENTOR(S): Yoshimura, Tatsushiro; Tominaga, Shigetake
PATENT ASSIGNEE(S): Daikin Kogyo Co., Ltd. , Japan
SOURCE: Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 75908	A1	19830406	EP 1982-108901		1982 0925
EP 75908	B1	19841227			
R: DE, FR, GB					
JP 58053960	A2	19830330	JP 1981-154180		1981 0928
JP 61016293	B4	19860430			
US 4521596	A	19850604	US 1982-423189		1982 0924
PRIORITY APPLN. INFO.:			JP 1981-154180	A	1981 0928

AB Fluorocarbon polymer coatings are adhered to metal surfaces using primer coatings containing fluororesin dispersion, H2MoO4 or its salt, NH4OH, H3PO4 or its salt, and colloidal SiO2, with the coating having good heat and corrosion resistance and no **toxicity** or **pollutant** release. Thus, 16 parts MoO3 was dissolved in 40 parts 28% aqueous NH4OH and diluted with 50 parts water. Then, 50 parts 85% H3PO4 was added followed by 100 parts colloidal SiO2. Then, the **composition** was **mixed** with polytetrafluoroethylene [9002-84-0] (55% dispersion) in ratio 20:10. The resulting primer was sprayed on an iron plate, dried 10 min at 100° and baked 20 min at 380°. A topcoat of hexafluoropropylene-tetrafluoroethylene copolymer [25067-11-2]

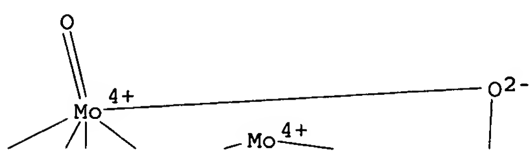
was applied to the primer and baked 5 h at 350°. The
coating had peel strength 6-7 kg/cm.

IT **12026-66-3**
RL: USES (Uses)
(primer coating **compns.** containing, for adhering
perfluorocarbon polymer coatings to metals)

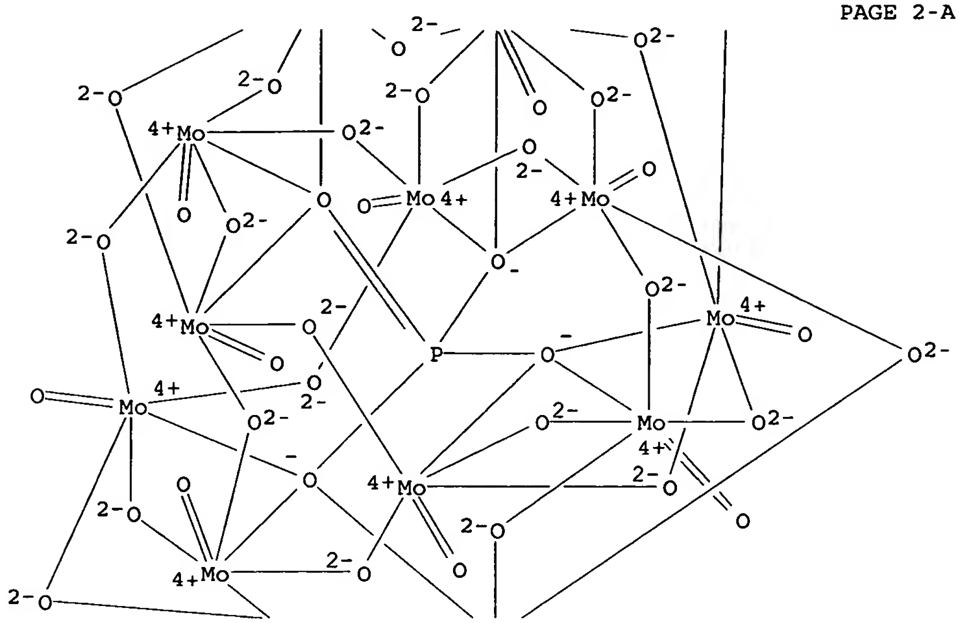
RN 12026-66-3 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]dodec
a-, triammonium (9CI) (CA INDEX NAME)

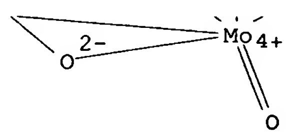
PAGE 1-A



PAGE 2-A



PAGE 3-A



●3 NH_4^+

IC C09D003-78; C09D005-08
CC 42-10 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 55, 56
IT Coating materials
 (perfluorocarbon polymer, adhesion of, to metal surfaces, **compns.** for)
IT 9002-84-0 25067-11-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coatings, for metal surfaces, adhesion of, **compns.** for)
IT 1313-27-5, uses and miscellaneous 1336-21-6 7631-86-9, uses and miscellaneous 7664-38-2, uses and miscellaneous 7782-91-4 **12026-66-3** 12027-67-7 34085-20-6 61583-60-6
 RL: USES (Uses)
 (primer coating **compns.** containing, for adhering perfluorocarbon polymer coatings to metals)

L114 ANSWER 62 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:526488 HCAPLUS
DOCUMENT NUMBER: 83:126488
TITLE: Complex tungsten compounds and their pharmaceutical use
INVENTOR(S): Chermann, Jean C.; Jasmin, Claude; Mathe, Georges; Raynaud, Marcel

PATENT ASSIGNEE(S): Agence Nationale de Valorisation de la Recherche
SOURCE: Fr. Demande, 47 pp. Division of Fr. Demande 2,117,803 (See Ger. 2,162,373, CA 77: 143794n).
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
FR 2161837	A2	19730713	FR 1971-43444		19711203
FR 2161837	B2	19750207			
PRIORITY APPLN. INFO.:			FR 1971-43444	A	19711203

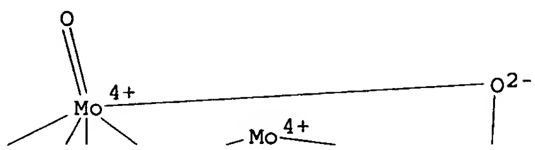
AB A series of 20 complex heteropolyanionic compds. (I), e.g., P2W18O62(NH4)6 [37300-90-6], SiW11O39CrIIIH5 [56367-35-2], PV2Mo10O40H5 [**12293-21-9**] and AsMo12O40H7 [56449-73-1], are useful for treatment of diverse viral infections. I consist of a plurality of anions derived from weak acids such as tungstic, molybdic and vanadic acids, grouped around a central atom such as B, Si, Ge, P, or As through coordination bonds with W, Mo, or V, in a ratio of W or Mo/central atom ranging mainly 8.5-12. One or more of the W or Mo atoms may also be substituted by V, Cr, Fe, Co, Ni, or Cu. Aqueous solns. of a precursor or Na salt of the central atom and of a precursor or Na salt of the weak acid, in definite molar concns. as desired, are **mixed** in the presence of a concentrated acid such as 5N H2SO4; the resulting solution is boiled under reflux for 5 hr and allowed to cool, and the precipitate formed is filtered to give the desired I in acid form. Ammonium, alkali metal, and alkaline earth salts are prepared by neutralization of the acid form with appropriate hydroxides. The preparation of I in which ≥1 W atoms are substituted by a metal is described. To a boiling solution of silico-12 tungstic acid in H2O-AcOH, adjusted to pH 6 with KHCO3, is added an aqueous solution of Co(OAc)2 and a solution of KOAc in H2O-AcOH; the reaction **mixture** is filtered and kept overnight at 5°, and the deposited crystals are filtered and recrystd. from **warm** water to give I in which W is substituted by Co2+. Preclin. pharmacol. data are included, especially for SiW12O40Na4 [**12027-47-3**]. Some of the compds. inhibited several viruses in vitro and in vivo.

IT **12026-57-2 12027-38-2 12027-47-3 12293-21-9 12297-12-0 37300-77-9 37306-30-2**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(virucide)

RN 12026-57-2 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, trihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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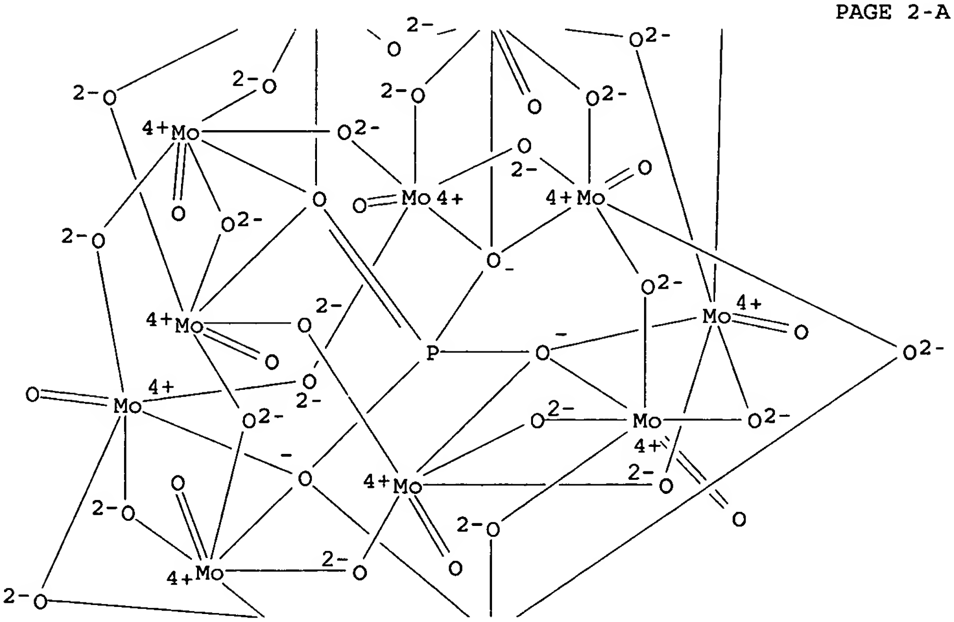

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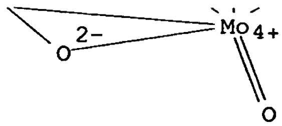
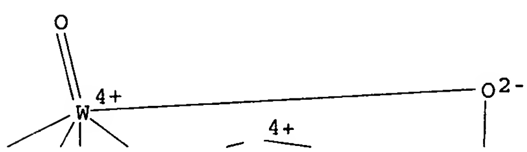


●3 H+

RN 12027-38-2 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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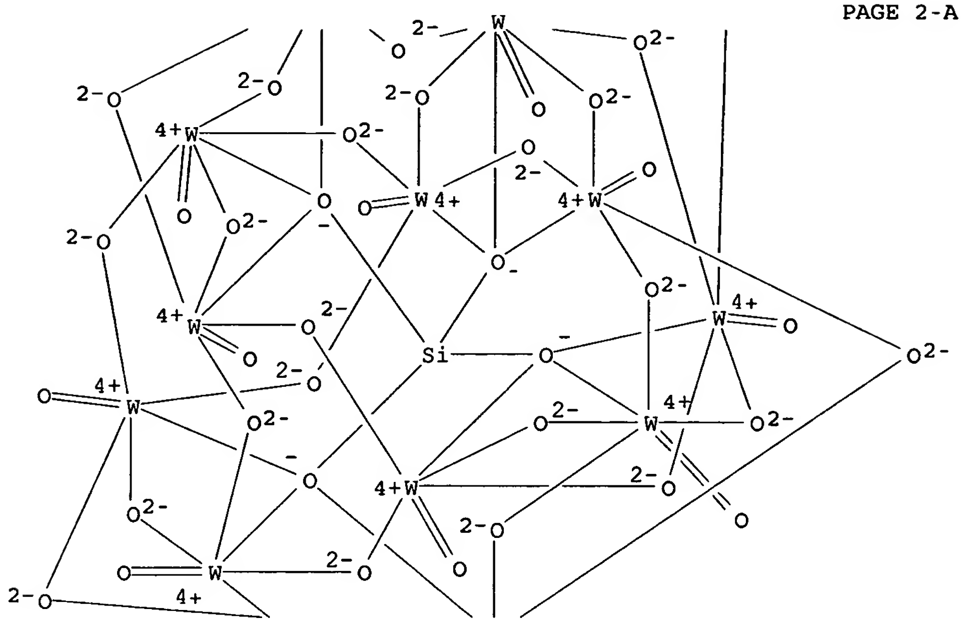

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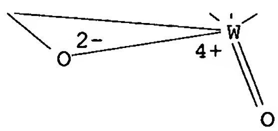
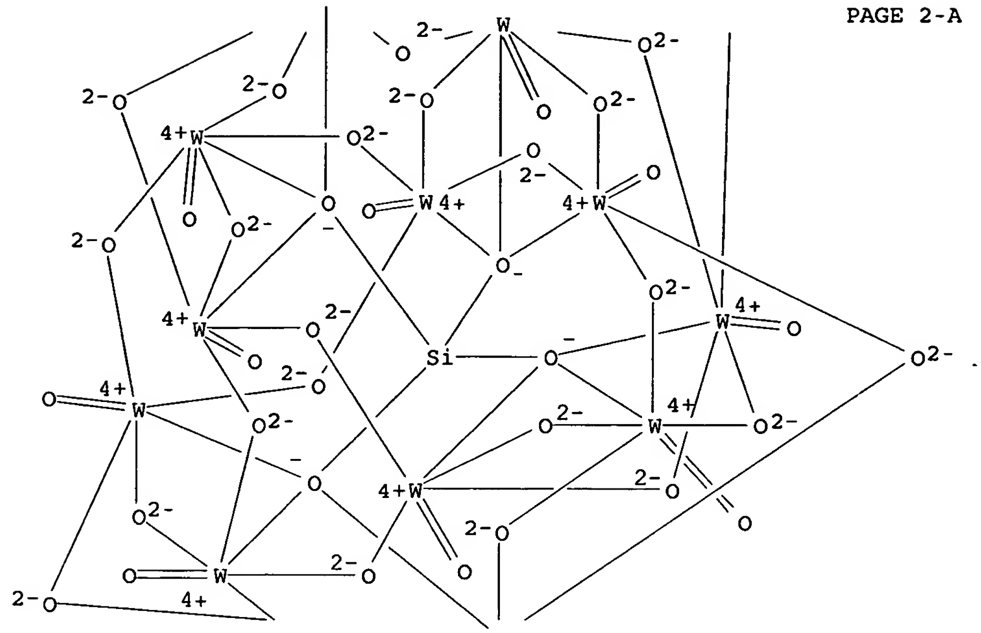


●4 H^+

RN 12027-47-3 HCAPLUS
CN Tungstate(4-), [μ12-[orthosilicato(4-)-
κO:κO:κO:κO':κO':κO':κO'
':κO'':κO'':κO''':κO''':κO''']]tetra
cosa-μ-oxododecaoxododeca-, tetrasodium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

PAGE 2-A



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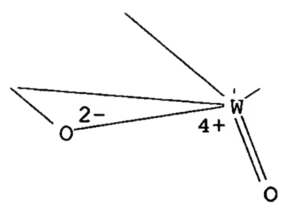
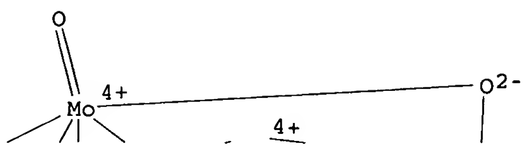


● 4 Na^{+}

RN 12293-21-9 HCAPLUS

CN Vanadate(5-), (heptadeca-μ-oxodecaoxodecamolybdate)hepta-μ-oxodioxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]di-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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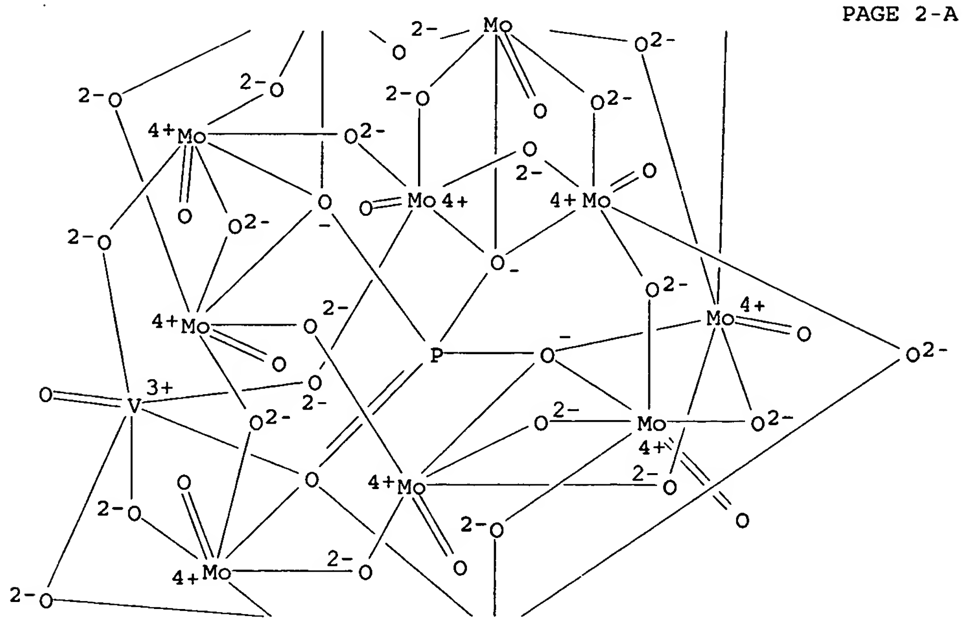
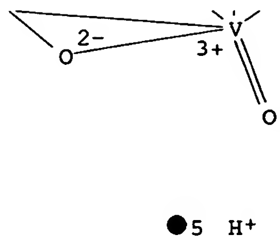
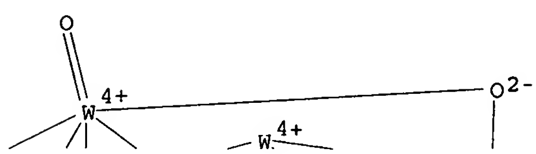


PAGE 3-A



RN 12297-12-0 HCAPLUS
CN Tungstate(5-), tetracosa-μ-oxododecaoxo[μ12-[tetrahydroxyborato(5-)-κO:κO:κO:κO':.kappa.O':κO':κO'':κO'':κO'':κO''':.kappa.O''':κO''']]dodeca-, pentahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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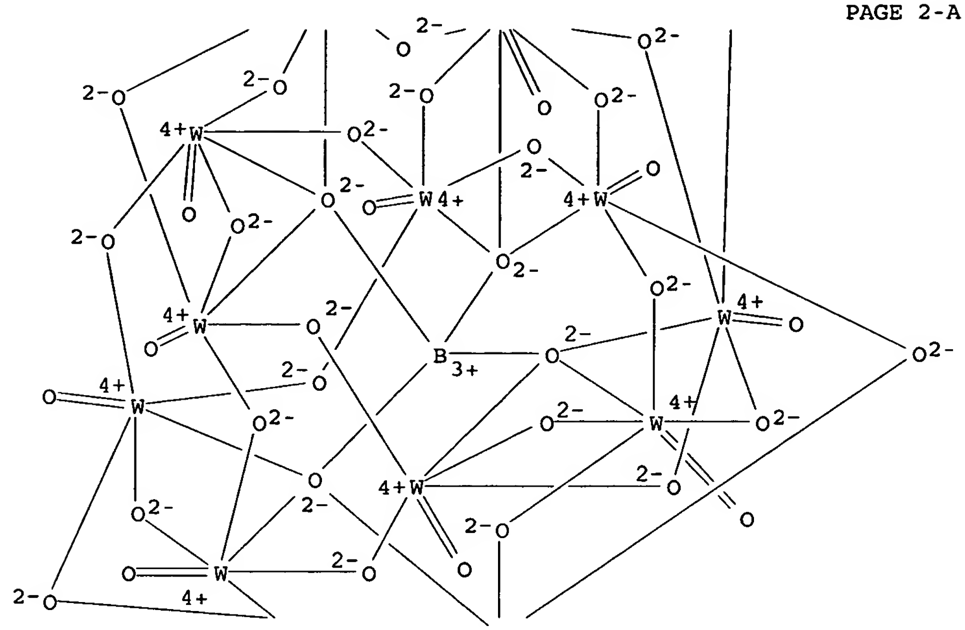

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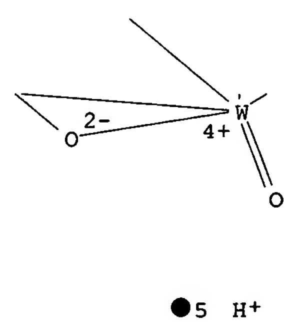

RN 37300-77-9 HCAPLUS
CN Tungstate(6-), (hydroxyferrate)[μ12-[orthosilicato(4-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]tetracosa-μ-oxoundecaoxoundeca-, hexapotassium (9CI) (CA INDEX NAME)

PAGE 1-A

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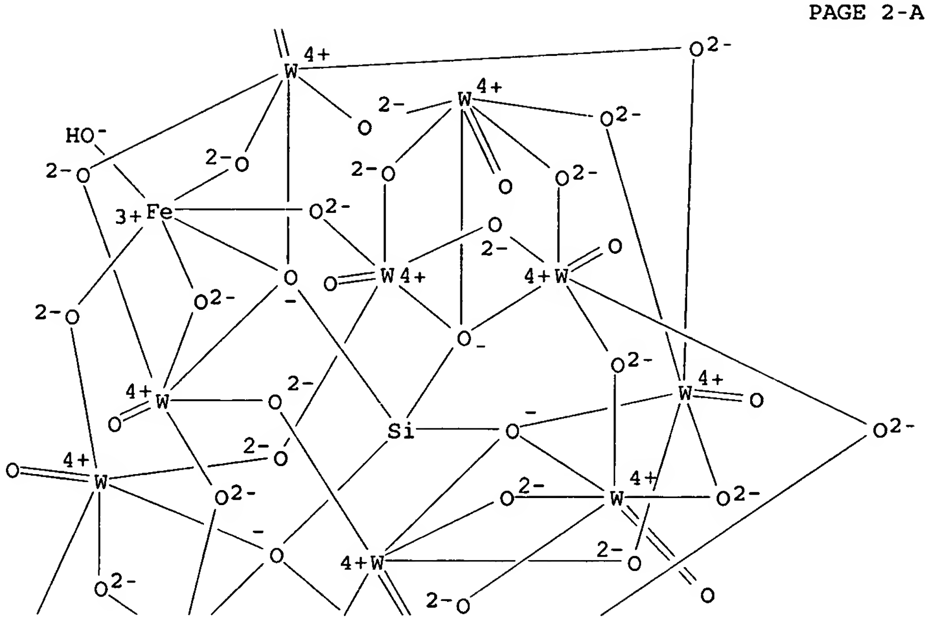

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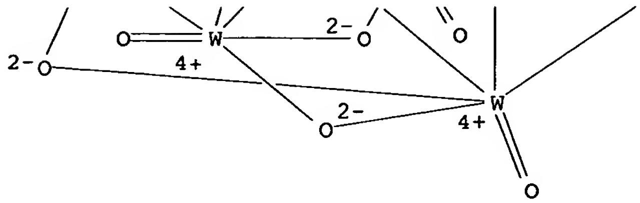

● 6 K^+

RN 37306-30-2 HCAPLUS
CN Tungstate(7-), (aquacuprate)tetracosa-μ-oxoundecaoxo[μ12-
[tetrahydroxyborato(5-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']
]undeca-, tripotassium tetrasodium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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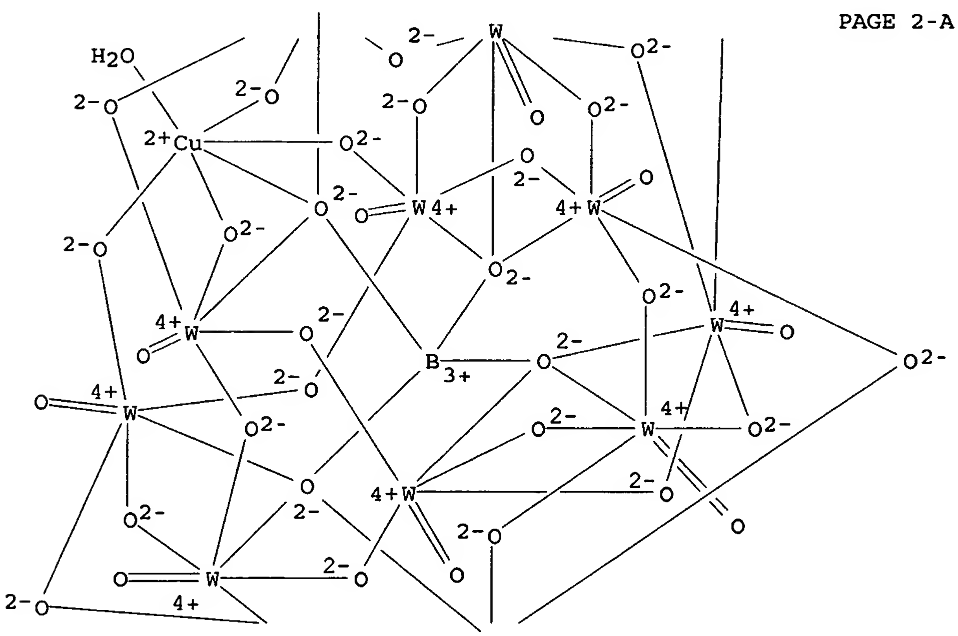
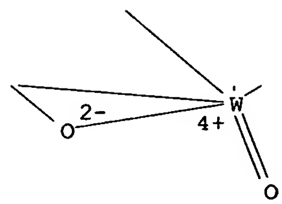
PAGE 2-A



PAGE 3-A



●3 K+

●4 Na+

IC A61K; C01B
CC 1-5 (Pharmacodynamics)
Section cross-reference(s): 3
IT **12026-57-2 12027-38-2 12027-47-3**
12207-33-9 **12293-21-9 12297-12-0** 12339-25-2
12398-81-1 **37300-77-9** 37300-91-7 37300-94-0
37300-95-1 **37306-30-2** 37306-31-3 37308-25-1
37308-26-2 56367-34-1 56449-73-1 56449-74-2 110294-54-7
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(virucide)

L114 ANSWER 63 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1964:407695 HCAPLUS
DOCUMENT NUMBER: 61:7695
ORIGINAL REFERENCE NO.: 61:1243e-h,1244a
TITLE: Conditions for quantitative precipitation of phosphorus as ammonium molybdophosphate
AUTHOR(S): Archer, D. W.; Heslop, R. B.; Kirby, R.
CORPORATE SOURCE: Univ. Manchester, UK
SOURCE: Analytica Chimica Acta (1964), 30(5), 450-9
CODEN: ACACAM; ISSN: 0003-2670
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The conditions for quant. precipitating PO43- as ammonium molybdophosphate, (NH4)3(P(Mo3-O10)4), (I) were determined with resp. to temperature, time of standing, stirring, the MoO42-/PO43- ratio, the effect of HCl, H2SO4, HNO3, and HClO4, and addition of NH4NO3 before precipitation by measuring the β-activity of H3 32PO4 in the filtrates from I. The H332PO4 was prepared by **mixing** 2.5 ml. concentrated HCl, 1 ml. of 30% H2O2, 2.5 ml. of 0.0167 M KH2PO4, and 40 µc. of 32P as H332PO4, **warming** on a hot plate for 15 min., and diluting to 100 ml. with H2O. The β-activity of filtrates (≥10,000 counts) was counted using a liquid counter and an automatic scaler. To determine the time and temperature for quant. precipitating PO43-, 4 ml. of nitromolybdate (II) (prepared according to Thistlethwaite, CA 42, 2206i) was added to 2 ml. of 0.0167 M KH2PO4, containing about 0.5 µc. H3 32PO4, in a series of expts. at different temps. (30-90°). The solution was held at the selected temperature, stirred every 15 min., and allowed to stand for the same period of time at 25°. I was filtered, washed with acid NH4NO3, and finally with 1% HNO3. A β-count was made on the combined filtrate and washings and on the NH4OH extract of I. The % PO43- precipitated was calculated from the corrected count rates. Mo, PO43-, and NH4+ were determined in I. After dissolving I in a min. volume of M NaOAc (pH 8.7), Mo6+ was determined as the 8-quinolinolate,

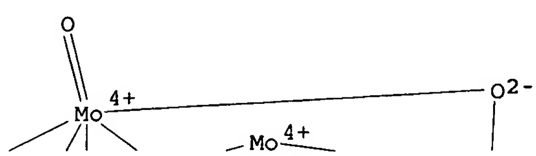
MoO2(C9H6ON)2 (III). The filtrate and washings from III were adjusted to pH 5.8 with M NaOH, and PO43- was determined as Pb3-(PO4)2. PO43- in I also was determined as MgNH4PO4.6H2O, after dissolving I in a min. volume of dilute NH4OH. NH4+ was determined by distillation of NH3 and titration. The factors of MoO42-/PO43, the effect of mineral acids, and addition of NH4NO3 were determined in a similar way. PO43- is precipitated quant. with 2-5.2 times the stoichiometric amount of II at 50 80°, allowing the **mixture** to stand for ≥30 min. at that temperature and 30 min. at 25° stirring at 15 min. intervals. The **composition** of the precipitate formed at 80° is between I and (NH4)2H(P(Mo3O10)4), as found by Thistlethwaite (loc. cit.). The precipitate formed at 90° has a Mo/P ratio > 12 and a NH4+ content less than that of I formed at 80°. HNO3 should be added; 3.8-6.5 M is optimum for precipitating I at 70 or 80°, but 10 M HNO3 allows quant. precipitation HClO4, 0.5-1.7 M, does not interfere, but HCl and H2SO4do. NH4NO3 has no effect. Peptization of the precipitate occurs if (NH4)2MoO4, HNO3, and PO43- are **mixed** sep.

IT **12026-66-3**, Ammonium molybdophosphate, (NH4)3PMo12O40
(precipitation of)

RN 12026-66-3 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]dodeca-, triammonium (9CI) (CA INDEX NAME)

PAGE 1-A



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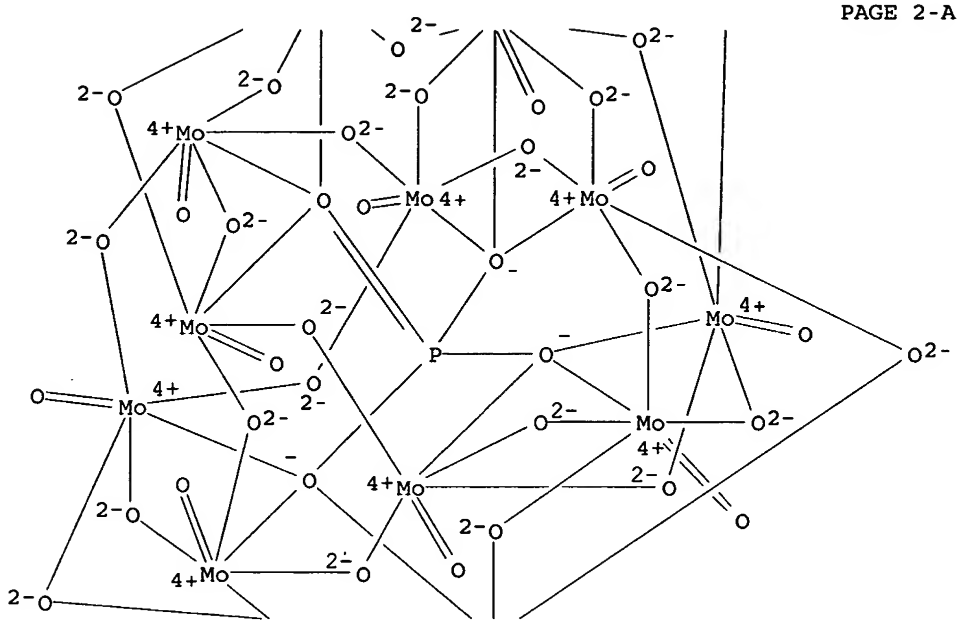

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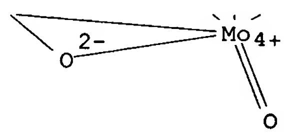


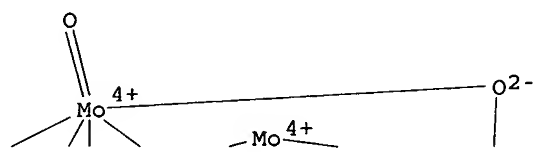
●3 NH_4^+

IT 12026-65-2, Ammonium molybdophosphate, (NH4)2HPMo12O40
(preparation of)

RN 12026-65-2 HCAPLUS

CN Molybdate(3-), tetracosa-μ-oxododecaoxo[μ12-[phosphato(3-)-O:O:O:O':O':O':O'':O'':O'':O''':O''':O''']]dodeca-, diammonium hydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



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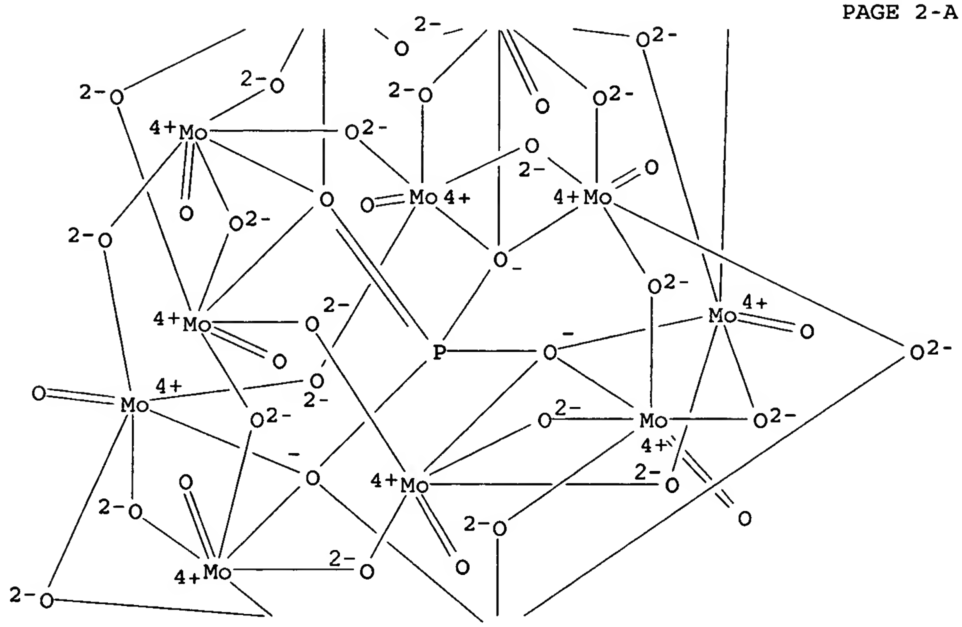

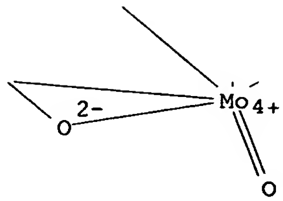

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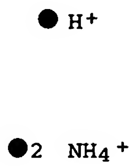


CC 2 (Analytical Chemistry)
IT **12026-66-3**, Ammonium molybdophosphate, (NH4)3PMo12O40
12704-86-8, Ammonium molybdophosphate
(precipitation of)
IT **12026-65-2**, Ammonium molybdophosphate, (NH4)2HPMo12O40
(preparation of)

L114 ANSWER 64 OF 64 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1929:20401 HCAPLUS
DOCUMENT NUMBER: 23:20401
ORIGINAL REFERENCE NO.: 23:2405d-h
TITLE: High-test cast iron
AUTHOR(S): Lemoine, R. P.
SOURCE: Am. Foundrymen's Assoc. (preprint) (1929), No. 29-12, 259-88
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB A graphical representation of the constitution of Cast Fe is discussed. The best mech. properties are attained when the Fe is composed only of graphite and pearlite, with the lowest total C.Free cementite is less detrimental than free ferrite. The cooling speed must be controlled to get equally good properties in different thicknesses of section. The Si content has somewhat the same influence as the cooling speed, but it also tends to diminish the C content of pearlite, so that under certain conditions increased Si giving more graphite does not involve the formation of ferrite, With low total C and high Si, the effect of cooling speed is diminished, giving uniformity of structure in all sections, and high strength. The French practice in making semi-steel shells during the **war** is reviewed. The Lanz and Thyssen-Emmel processes, based on, the pearlite-graphite structure, are not considered novel, or practical for varied work. The use of expensive alloys in cast Fe is not necessary for high mech. strength. Elec. melting is useful for the chemical improvement of poor raw materials, and for refining the graphite, possibly by allowing kish to float out at high temperature Steel scrap is the best base for elec. furnace charges, which can readily be brought by addns. to any desired **composition** The cost may be reduced by using a cupola for melting, and refining electrically. In this duplex practice, the cupola product should be as near the correct C content as possible, to save current consumption. To obtain a low-C cast Fe from the cupola, melting of steel scrap must be hastened by high airpressure with only 12 to 14% coke, so that the fused drops passing the tuy`eres contain only 2% C. The use of a bottom receiver is an advantage to raise the temperature, and the absorption of too much C in the receiver is best prevented by

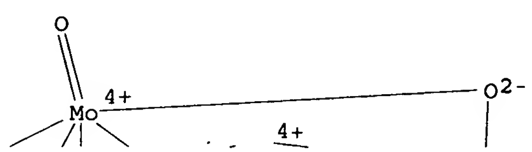
replacing some of the coke in it with brick fragments. Low-C Fe made in this way from rusty scrap may be wild and oxidized, but with ample Si it should be sufficiently fluid and quiet. Losses of Si through the cupola are lessened with an acid slag. High-Si steel scrap and high-Si pig Fe in the charge, are useful; pig Fe containing 2.7% C and 4% Si is practical and convenient, but addns. of ferric Si may be resorted to. The quality of such Cast Fe is between that of semi-steel and elec. cast Fe, and its cost is not excessive.

IT **12027-12-2**, Silicomolybdic acid, H4SiO4.12MoO3
(effect on cast iron)

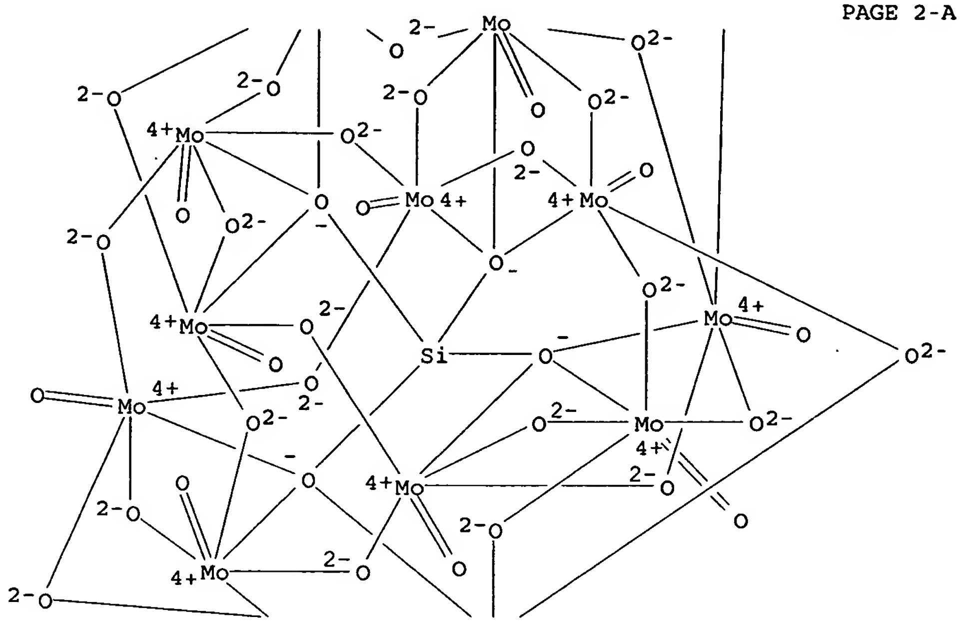
RN 12027-12-2 HCAPLUS

CN Molybdate(4-), [μ12-[orthosilicato(4-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO''':κO''':κO''']]tetracosa-μ-oxododecaoxododeca-, tetrahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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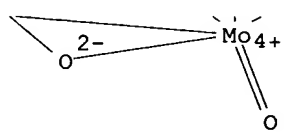

● 4 H^+

CC 9 (Metallurgy and Metallography)
IT **12027-12-2**, Silicomolybdic acid, H4SiO4.12MoO3
(effect on cast iron)

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